ENGINEERING CONSTRUCTION WEEKLY

ENGINEERING NEWS-RECORD

JANUARY 12, 1939

Floor steel erection begins on Whitestone Bridge at New York

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FOR THE ENGINEER who is still on the fence about

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IRON

It's Time to Repeat these Facts–

WHAT IS TONCAN IRON? A scientifically refined open hearth iron alloyed with the correct proportions of copper and molybdenum.

HOW WAS IT DEVELOPED? Thirty years ago it was simply highly refined iron. Research showed that by alloying copper with the iron an increase in rust-resistance resulted. Continued research showed that additions of copper and molybdenum greatly increased resistance to rust. Such is Toncan Iron today.

WHY WAS IT DEVELOPED? To lengthen the life of metal products—to reduce the world's annual rust-tax bill estimated by authorities at more than three billion dollars.

HOW DOES IT COMBAT RUST? Chemical uniformity minimizes electro-chemical differences and slows rate of solution. Structural uniformity—a fine equi-axed grain structure—contributes additional rust-resistance. Under conditions favoring rust formation, an inert, dense adherent film may be found on the surface of Toncan Iron, protecting the surface beneath.

IS IT EASY TO WORK? Yes—it can be cut, bent, formed, threaded and welded more easily than less uniform metals and, unique with Toncan Iron, cold working does not impair its rust-resisting qualities. Because it may be had in bolts, nuts, rivets and welding rod, entire fabricated units may be made possessing uniform resistance to rust. No weak spots to jeopardize useful life.

DOES TONCAN IRON POSSESS THE HIGHEST RUST-RESISTANCE AMONG METALS IN ITS PRICE CLASS? Judge for yourself. Toncan Iron sheets installed 24 years ago on rapid transit coaches are still in service. Well tubing of Toncan Iron carrying black sulphur water showed no deterioration after 16 months while ordinary tubing had required replacement 4 times a year. In a brine well where other pipe required replacement every year Toncan Iron pipe showed no signs of pitting or failure after 12 months of use. The engineer of a large coal company using Toncan Iron for conduits found that it lasted 3 to 5 times as long as the best non-alloy materials. Write for literature giving dozens of actual life histories like these. Address Republic Steel Corporation, Cleveland, Ohio. And when you need a rust-resisting metal, remember that–

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NILES STEEL PRODUCTS DIVISION

TONCAN IRON

An alloy of refined open-hearth iron, copper and molybdenum
–that grows old slowly

ENGINEERING NEWS-RECORD

Volume 122 JANUARY 12, 1939 Number 2

NOTEBOOK NEWS

Quick Surveys of Construction Events

▶ This is the biweekly News Issue of *Engineering News-Record*. It contains News of the Week, Construction Reports, Unit Bid Prices and Job Proposals, in fact all the features that readers say they need every week. Technical articles, as announced last week, will be concentrated in the issues alternating with these all-news issues.

In brief: News every week when you need it. Technical articles every two weeks giving you more reading time.

▶ A new and we hope informing pictorial way of presenting current engineering and construction events is inaugurated on pages 4 and 5. Not only is the immediate happening pictured but the earlier operations which set the stage for it are also illustrated.

▶ We also turn to pictures for better news about people. In "Men at Work" on page 8, some News-Record readers are introduced. None of these men has changed his job or died (which are the conventional happenings that make men news) but each is actively engaged in advancing some important construction project or plan. That, too, we submit, makes men news.

▶ One more item and we are through with innovations, for this issue at least. It relates to the numbering of pages, which readers have told us has been unduly complicated. From now on each issue will be numbered consecutively from front to back, advertising and text pages alike. But text pages will carry the indexing numbers (in parenthesis) so that the many readers who bind the volumes and refer to our semi-annual indexes will have a ready and consistent reference.

Ship Wrecks Lift Bridge Over Delaware Canal

The 160-ft. vertical lift span and the north approach span of the du Pont Highway crossing of the Chesapeake & Delaware Canal at St. George's, Del., 16 miles south of Wilmington, collapsed on the morning of Jan. 10 under the impact of the 6,000-ton freighter *Waukegan*. Of the two men in the operating house at the center of the lift span, one was killed and one seriously injured.

COL. FRANCIS C. HARRINGTON
whose first job as head of the WPA is to defend his budget in Congress

The freighter, moving against the tide, apparently went out of control, left the navigable channel, pierced the fender system, and struck the approach span upon which the back legs of the tower rested. The result was the complete collapse of the tower and the two spans. The bridge, owned by the federal government, was built in 1923.

First Contract Made For Bonneville Power

Agreement with Cascade Locks includes provision to protect scenic values of region

The town of Cascade Locks, Ore., became the first customer for power from the Bonneville development on the Columbia River when it executed a contract Jan. 4 under which the Bonneville administrator agreed to deliver 200 kw. to the city for a period of 20 years at a uniform price of $17.50 per kw.-year. It is stipulated that, if the city supplies its own transmission line, the cost will be only $14.50.

The town has agreed to put into effect as soon as possible retail rates suggested by the administrator and has also agreed to keep rates at a level sufficient to pay off all bonds and maintain the system in sound financial con-

(*Continued on page 7*)

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Change in Subway Plan Saves Chicago $80,000

The design of the North State St. section of the Chicago subway, which was pushed through in two weeks in order to meet PWA deadlines, has been modified at a saving in this half-mile section of $81,900. With the consent of the Herlihy-Midcontinent Co., contractors on this section, the width and height of each barrel of the tunnel has been reduced by 9 in. and the thickness of the sidewalls by 2 in.; invert thickness has been reduced 1½ in. The new cross-section follows the same design as that used in the Clybourne Ave. portion of the subway project.

The reduction in width was made possible when new figures on widths of cars and space requirements for signals were made available. The thickness reduction was secured by closer design of the barrel arches.

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New Engineer Union To Inspect Buildings

AFL group of licensed men plans labor pressure to force inspection

A group of engineers engaged in building inspection work in New York City has formed a union known as the Supervising Professional Engineers Union with headquarters at 215 Montague St., Brooklyn. Edmund J. McCormick of Edmund J. McCormick, Inc., is president and Frederick Gehrig is secretary. McCormick states that an AFL charter covering the whole country has been granted the union.

The organization departs radically from the normal type of trade union in that its chief purpose is to develop an enlarged field of activity for its members rather than to represent them in collective bargaining on matters relating to pay and working conditions.

Membership in the union is to be limited to licensed professional engineers with five years experience in building inspection work. Graduate engineers who are engaged in gaining the practical experience required for an engineer's license and who have had three years' experience in some form of building work will be taken in as assistant inspectors, but will be permitted to work only under the direction of a fully qualified member.

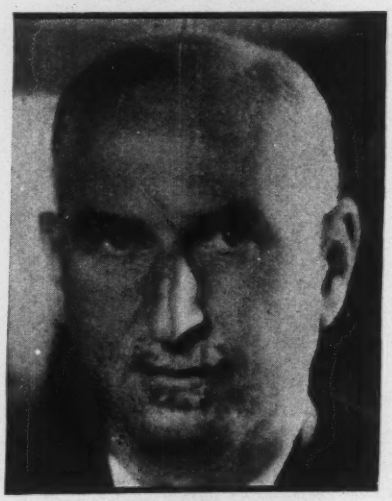
Minimum wages have been set at $125 a week for the fully qualified inspectors and $75 a week for the assistants.

Where the owner of the building under construction is also the general contractor, as is the case with much of the speculative building in New York, the inspectors will be employed by the owner, according to McCormick, but where there is a general contractor on the job he will pay the supervising engineer.

This inspection is not to supplant the engineers' or architects' inspection, McCormick states, but is to be supplemental thereto, principal attention being given to workmanship, compliance with specifications, and difficulties resulting from poorly drawn specifications.

Asked why an owner or contractor would pay for this new form of inspection, especially on jobs where the architect or engineer has his own inspectors on the job, McCormick said: "They will have to." Arrangements have been made or are to be made, he says, with the AFL building trades unions whereby they will refuse to work on jobs unless inspectors from the Supervising Professional Engineers Union are employed. However, McCormick stated that this drastic action would not be taken until the new union had built up sufficient membership to meet the demand for inspectors which such action would create.

JOHN ARMSTRONG
will head C.P.R. engineers



J. M. R. FAIRBAIRN
retires as C.P.R. chief engineer

Car Knocks Kansas Bridge Off Its Piers

In an unusual accident, Jan. 1, a passenger car approaching a bridge across the Solomon River at Beloit, Kan., struck the side railing of the bridge with such force that a section of the bridge was knocked from its piers and collapsed, plunging bridge and car into the river bed.

The bridge, a 70-ft. steel structure, was built in 1897. A section of it was blown out in 1905 by a cyclone, but it was rebuilt on the old piers.

New Chief Engineer Named on C.P.R.

Fairbairn retires after 38 years with line and Armstrong assumes chief engineer's post

After serving with the Canadian Pacific Ry. since 1901, J. M. R. Fairbairn retired Dec. 31 at the age of 65 from his post as chief engineer of the line. The post was filled by John Armstrong, who has been assistant chief engineer since 1928. F. W. Alexander moved into the post of assistant chief engineer from his present position as engineer of maintenance of way at Winnipeg.

Fairbairn joined the C.P.R. as assistant engineer in the division engineer's office in Montreal and became acting division engineer of the Quebec district in 1905. The next two years he served as division engineer at Toronto and at Montreal and became principal assistant engineer in the chief engineer's office in 1908. Two years later he became engineer of maintenance of way, and after a year became assistant chief engineer. He was appointed to the chief engineer's post from which he is now retiring in 1918.

Fairbairn is a past president of the American Railway Engineering Association and is chairman of the Montreal membership committee of the American Society of Civil Engineers. He is also a past president of the Engineering Institute of Canada and has served as chairman of the advisory committee for Canada of the Institution of Civil Engineers of Great Britain.

Armstrong graduated in civil engineering from Cornell University in 1908 and after four years with the Cleveland-Pittsburgh Division of the Pennsylvania R. R. became assistant engineer of the C.P.R. at Montreal. He became assistant chief engineer in 1928. He was president of the American Railway Engineering Association in 1934.

F. W. Alexander, who will assume Armstrong's post, began his railway career in 1897 on the engineering staff of the Bangor & Aroostook Railway. He joined the C.P.R. six years later as a transitman in Saskatchewan, later became district engineer there, and in 1913 became division engineer in Calgary. Ten years later he was made resident engineer of western lines in Vancouver and in 1927 became engineer of maintenance of way at Winnipeg.

Also retiring from the Canadian Pacific is Frank Taylor, right of way and tax agent. Taylor joined the line in 1899 as a rodman at Montreal. In 1908 he became division engineer at North Bay and in 1912 was assigned to the post from which he is now retiring.

LABOR NOTES

FOURTEEN machinists, automobile mechanics, and blacksmiths went on strike last week at Ruby Dam, when the General Construction Co., contractor on the project, refused to raise their pay from $1.25 to the $1.50 paid the electricians and skilled building trades workers. Ruby Dam is being built on the upper Skagit River by the Seattle department of lighting for the generation of power. The ultimate height of the dam will be 640 ft.

ALL NINETEEN of the employees of the St. Louis waterworks division who were suspended after the recent unsuccessful strike of operating engineers have been permanently dismissed from the city service. Seven of the men, who were operating engineers, were dismissed after hearings, while the remaining twelve—oilers, coal passers, and firemen who had joined the operating engineers union—were dismissed without hearing because they were not in good standing with the firemens union.

Army Approves Power On New England Dams

The Secretary of War on Jan. 5 announced his approval of installation of penstocks for use in possible future power developments at three of the four flood control projects in New England on which the Federal Power Commission last month recommended such action. (*ENR*, Dec. 15, 1938, p. 750) The three dams approved by the secretary for possible power development are at Franklin Falls, N. H. in the Merrimack River basin and at Union Village, Vt. and Knightsville, Mass. in the Connecticut basin. FTC had also recommended installation of penstocks at Surrey Mountain, N. H.

Under the 1938 flood control act, approval of both agencies is needed for installation of penstocks.

The secretary announced Oct. 6 that the department had made funds available for construction of these three dams. All preliminary work, including subsurface exploration and preparation of plans and specifications, has been nearly completed, so that the dams may be advertised for construction in the near future.

Wide World Photo

FIRST WATER FLOWS THROUGH COLORADO AQUEDUCT

WATER BEGAN POURING into the Gene Wash Reservoir Jan. 7 as the first section of the Colorado River Aqueduct went into service. Officials of the thirteen member cities of the Metropolitan Water District of Southern California saw the Intake Pumping Plant, first of five plants to go into service (*ENR*, Jan. 5, 1939, p. 1), begin lifting water 291 ft. from the reservoir behind Parker Dam into a 2-mile tunnel which brought it to Gene Wash.

Carpenters' Demand For Label Upheld

Missouri court voids injunction against boycott of non-union millwork by St. Louis carpenters

The St. Louis Court of Appeals, a state court, has dissolved a lower court injunction prohibiting the carpenters district council of St. Louis from ordering its affiliated unions to refuse to handle millwork not bearing the union label.

The Crescent Planing Mill Co., one of about twenty mills in the St. Louis area operating on an open shop basis, obtained the injunction in 1936. The carpenters district council had begun enforcing its rule against the use of non-union millwork on Jan. 1 of that year. The council has long had a similar rule against the use of non-union cabinet work.

No malice shown

In dissolving the injunction, the appeals court pointed out that "a boycott implies a combination of several persons to cause a loss to a third person. It is at once apparent, we think, the plaintiff's case failed for want of proof of an essential element of the case, that is, the malicious object and purpose on defendant's part to cause injury to plaintiff as a concern with which the union had a personal grievance separate and apart from its controversy with all the open shop mills."

Enforcement of the council's rule, the court found, was neither inspired by malice nor was it primarily designed to inflict injury on the plaintiff or any other company. Rather the rule was designed primarily to benefit the members of the union, and the members were at all times willing to handle the firm's millwork if it obtained the right to use the union label.

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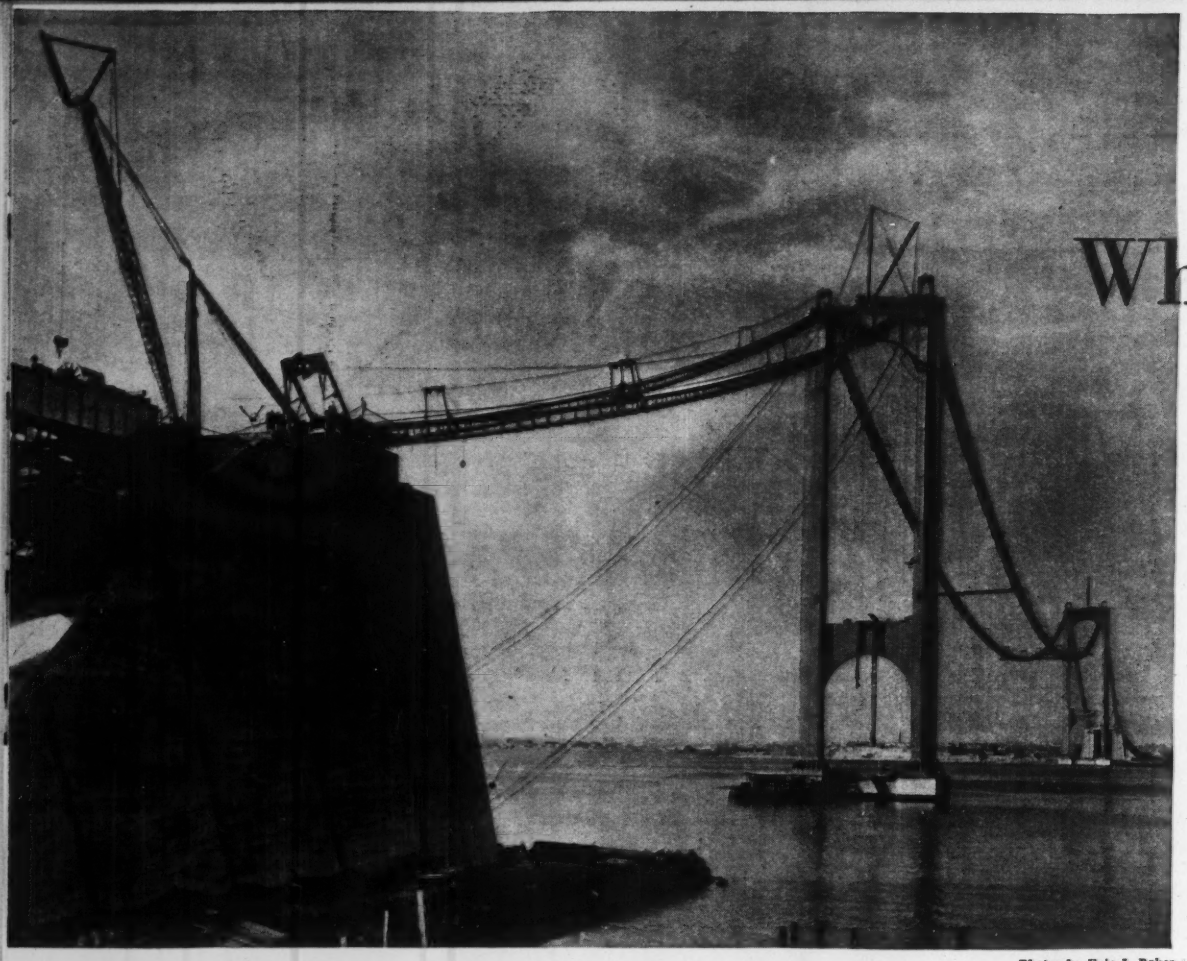
No Winter Concreting At Grand Coulee

Tentative plans for continuing concreting work at Grand Coulee dam throughout the winter have been abandoned. According to the announcement, it has been agreed that presence of curing and wash water would create icy conditions which would make the work too hazardous.

The contractor is continuing to pour on a reduced schedule in certain blocks of the spillway section until about Jan. 15. At that time it is planned to stop all concrete work until early spring, probably some time in March. Pouring in the west power house was stopped late in December.

Whitestone



Photos by Eric J. Baker

AS THE WHITESTONE BRIDGE appeared during the 2 months of cable spinning. Operations and equipment were patterned after those used by the same contractor on the San Francisco-Oakland Bridge, as, for example, two-groove spinning wheels and chain-link-fabric footwalks. Notable elements of bridge design shown in this view are the rigid frame towers, whose lack of diagonal bracing made fabrication and erection unusually easy, and the anchorage shaped to the curve of the cables that it incloses and decorated with four flutes or "accordion pleats" to convey the idea that the cable pull tends to compress the anchorage as an accordion is compressed. The rather elaborate storm cable system served its purpose admirably in the September hurricane.

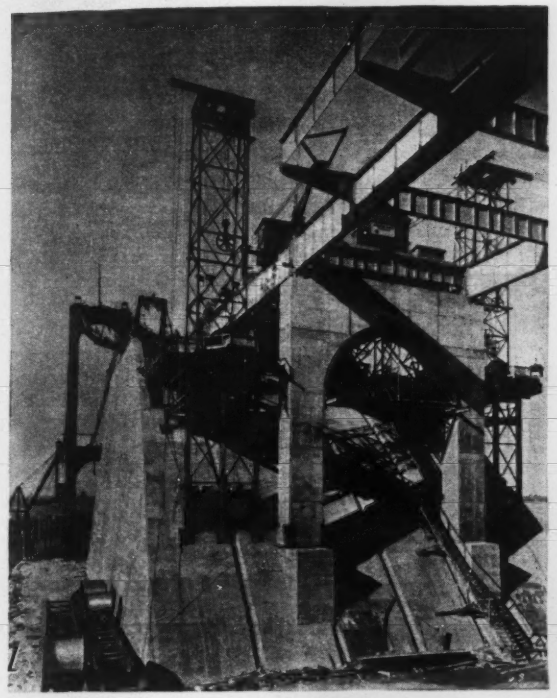
WHEN CONSTRUCTION BEGAN in June, 1937 on the foundations of the $18,000,000 Bronx-Whitestone suspension bridge spanning the narrow strait that joins the East River with Long Island Sound at New York City, engineers and contractors faced one of the toughest construction schedules ever drawn up. In 24 months, this 2,300-ft. span structure, fourth longest in the world, had to be open for World's Fair traffic.

With just five months of this period left, there is no doubt that the completion date will be met. Cable spinning was finished Nov. 22, three weeks ahead of schedule. Suspender ropes were hung before the first of the year and now floor steel erection is getting under way.

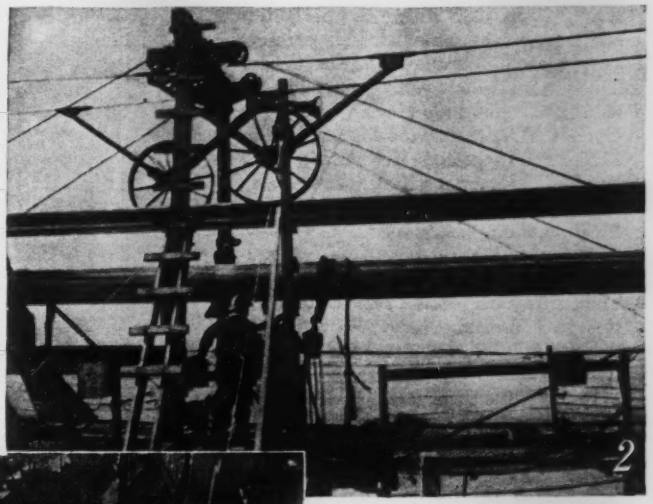
Who is responsible for this fast pace? First, O. H. Ammann, chief engineer, Allston Dana, engineer of design, and Aymar Embury II, consulting architect of the Triborough Bridge Authority for an unusually simple and efficient design. Then, in the field, credit goes to Madigan-Hyland, engineers in charge of construction; to Frederick Snare Corp. which sunk the foundations; to Corbetta Construction Co. which built the anchorages; and to the American Bridge Co. which erected the towers, spun the cables and is now erecting the floor steel.

Pictures on these pages record some of the American Bridge operations which brought cable spinning to completion and floor erection into the spotlight. An article presenting these operations in detail will be published in the near future.

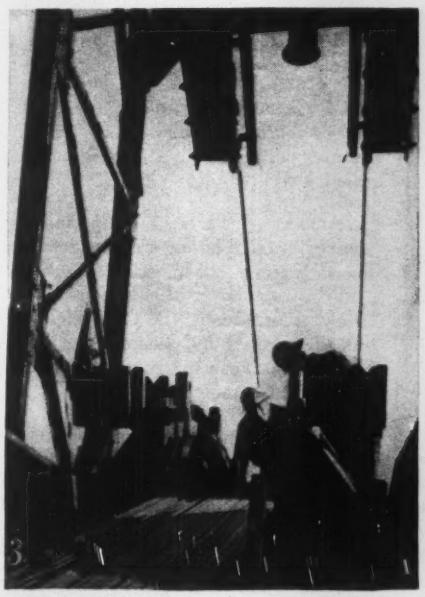
Bridge Erection Enters Final Stage



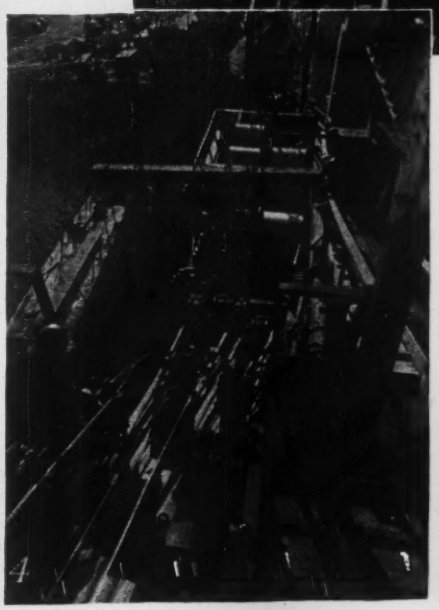
1. *WHEN CABLE SPINNING BEGAN Sept. 13, an unusually efficient equipment layout was available. This view is dominated by the floating-sheave tower through which wires from the reels are reeved before going to the spinning wheel. The floating sheave maintains uniform tension in the wire as it is pulled out by the spinning wheel; as the sheave rises it picks up a counterweight chain which increases the tension and thus accelerates the reel to running speed. The reels are mounted on non-friction bearings and are not driven by motors.*



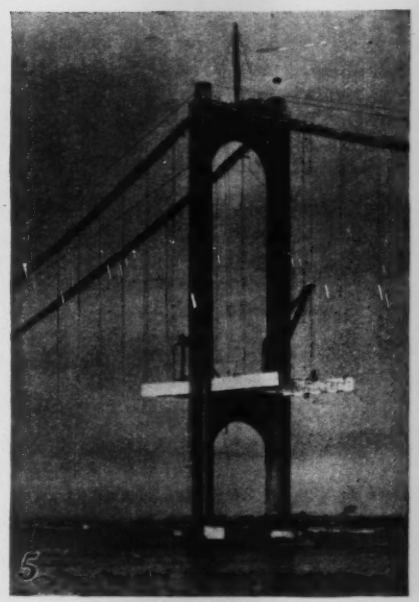
2. *SPINNING WHEELS, each carrying two loops of wire, pass at midspan. Strands being spun are above completed part of the cable. Note the chain-link-fabric footwalk.*



3. *CABLES were spun in the saddles on the towers, an innovation being the use of saddles of smooth circular section instead of the more usual grooved outline, which is difficult and costly to machine.*



4. *FOUR STRANDS were spun at a time, two wires being laid in each with each pass of the spinning wheel. This view at the cable bent shows strands being spun in formers above the saddle.*



5. *FLOOR STEEL ERECTION with deck travelers moving both ways from each tower has just begun and is scheduled to be completed April 15.*

Todd Dies, Builder Of Rockefeller Center

Other deaths include A. F. Theard, New Orleans drainage designer, and F. H. Olmstead

JAMES M. TODD, who retired about two years ago from membership in the New York contracting firm of Todd, Robertson & Todd, died Jan. 5 at his summer home in Boothbay Harbor, Maine. Todd's firm, before it dissolved upon his retirement, had an important part in the building of Rockefeller Center in New York City.

Todd was a graduate of Beloit College and Northwestern University and for some years practiced medicine in the West. In 1896 he entered the building business in New York in partnership with his brother in the Center Realty Co., which built a number of apartment, hotel and office buildings. Upon the retirement of his brother in 1916, Todd entered partnership with Hugh F. Robertson and three years later formed the firm of Todd, Irons & Robertson, building the Cunard Building and a number of other structures. In 1922 the Todd, Robertson & Todd firm was formed and erected the Graybar Building, the Ritz Tower, the Postum Building, and the Hotel Barclay.

In 1928, the firm, together with Todd and Brown, Inc., contracted for the building and management of Rockefeller Center, a project on which Todd was very active until his retirement.

ALFRED F. THEARD, 73, general superintendent of the New Orleans Sewerage and Water Board, died in New Orleans Jan. 2. He had been connected with drainage work in New Orleans since 1895. Theard began his first engineering work in 1881 as a draftsman for A. F. Wrotnowski and eight years later he began to practice privately. In 1893 he joined the staff of the city of New Orleans as a draftsman on a topographical survey of the city, and in 1895 he was appointed chief draftsman on drainage work. Three years later he was made office engineer in charge of this work, and upon the formation in 1903 of the New Orleans sewerage and water board he kept the same post, becoming first assistant engineer in 1907 and principal assistant engineer in 1914. He held the latter post until 1935 when he became general superintendent. Theard was one of the organizers and a past president of the Louisiana Engineering Society.

FRANK H. OLMSTEAD, former city engineer of Los Angeles, member of the Flood Control Commission of Los Angeles County, and a civilian member of the Army Engineer board for flood control on the Mississippi River, died Jan. 5 at Glendale, Calif., aged 80. Until within a few days of his death, he had been active as a consultant on a number of California projects. In his early years, Olmstead was active in the construction of the Mexican Central Ry.

B. M. PROCTOR, 32, and H. F. Ulmer, 28, engineers for the South Carolina highway department, were drowned Jan. 1 when their automobile broke through barricades on the uncompleted 13th St. bridge across the Savannah River at Augusta, Ga.

A SHORT RIDE HOME

WHEN THESE TRACTORS had to come down off the hillside for servicing, they brought a load of material ahead of them. Regular work of the two tractors was to shove material over the top of the bluff so that it could be removed by power shovel and truck from the toe of the slope below. A pioneer road not shown in the photograph made it unnecessary for the tractors to try to go back the way they had come after they had been serviced.

The job is the Newhall Tunnel cut in Southern California on which the California Division of Highways has construction under way.

CHARLES E. FOOTE, 80, founder of the Foote Co. of Nunda, N. Y., died there Jan. 2.

LOUIS C. ROEDER, Lockport, N. Y., construction engineer, died there Jan. 1 at the age of 59. He retired from active practice about a year ago.

J. HAMPDEN LEWIS, New Orleans civil engineer, a member of the firm of Lewis-Chambers Construction Co. of New Orleans since 1928, died in that city Jan. 6 at the age of 54. Before the war, Lewis was connected for about ten years with the U. S. Engineers.

CURTIS C. LATTIMER, 52, who retired in 1936 after eighteen years as county engineer of Franklin County, Ohio, died in Columbus Dec. 28. Since his retirement Lattimer had been head of the engineering department of the Columbus Chamber of Commerce. He was a graduate of the college of engineering of Ohio State University, and, before joining the county staff in 1909, he had been connected with the Galion Iron Works & Mfg. Co. He was a past president of the Ohio Society of Professional Engineers.

ARTHUR K. LEVY, 39, president of the Arco Construction Co. of Chicago, died in Miami, Fla., early this month.

RICHARD V. NICHOLSON, formerly bridge engineer for the Canadian Pacific Ry., died in Toronto Jan. 2 at the age of 72. At the time of his retirement seven years ago Nicholson had been connected with the Ottawa division of the C.P.R. for 23 years and with the line for 49 years.

M. JOSEPH MURPHY, 57, Louisville, Ky., contractor and for five years deputy city building inspector there, died Dec. 29.

ALBERT J. LEAMY, superintendent since its completion and resident engineer during construction of the Patullo Bridge over the Fraser River at New Westminister, B. C., died Dec. 27 at the age of 59. Leamy had been a bridge engineer for the provincial government for many years.

MILLER A. SMITH, retired civil engineer of Elizabeth, N. J., died there Jan. 3 at the age of 88. Smith was active in railroad and sugar mill construction in this country and South America prior to his retirement fifteen years ago. He was a member of the first class to be graduated from Cornell University, that of 1871.

THOMAS H. KOOKER, of the Jacksonville, Fla. civil engineering firm of Ellis Curtis & Kooker, died Jan. 1 in Jacksonville.

WASHINGTON HIGHLIGHTS

Special reports by Paul Wooton

ACTING in order "to provide a basis for study," Chairman Bland of the House Merchant Marine Committee, has introduced two bills, one calling for construction of the Nicaraguan Canal at a tentative maximum cost of $300,000,000 and another for construction of a third set of locks for the Panama Canal. At the same time that Bland's bills were referred to his committee, like action was taken on a bill introduced by Representative Izac who proposed an initial appropriation of $10,000,000 for the Nicaraguan canal, with a cost limit of $500,000,000.

A BILL introduced by Representative Rogers of Massachusetts would authorize the Army Engineers to conduct a survey, with the aid of the Health Service, to determine the cause and extent of pollution in the Merrimack River and to recommend remedial legislation. No appropriation is made in this bill, the cost to be born from river and harbor funds.

CONTRACTORS and subcontractors on federal projects would be made subject, under the terms of a bill introduced by Representative Wigglesworth, to all safety regulations of the states in which projects are located.

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First Contract Made For Bonneville Power

(*Continued from page* 1)

dition. An accounting system approved by the administrator will be used, and all power used for municipal purposes will be paid over in cash into the utility account.

Scenery protection

An unusual provision in the contract prohibits the sale of power by the city to any industry which might destroy the scenic beauty of the surrounding region. Administrator J. D. Ross recently stated to members of planning bodies in the Columbia River Basin that the Bonneville administration would make every effort to preserve the scenic values of the Columbia gorge.

The city recently agreed to purchase the generating and distributing system of the West Coast Power Co. at a price of $44,000. Consummation of the contract awaits a Supreme Court decision as to the validity of utility revenue bonds. The city plans to issue $90,000 in such bonds to pay for the company and also to erect a transmission line to the dam.

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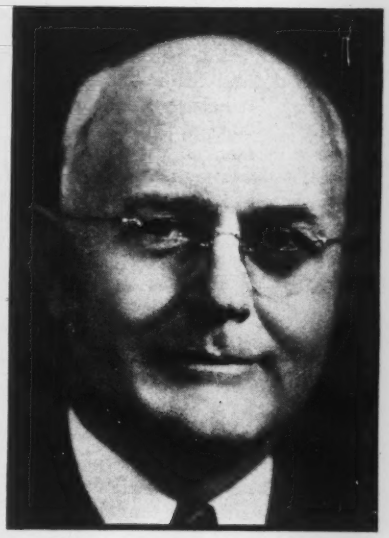
New York Sanitation Head Indicted on Landfills

Controversy over introduction of the landfill method of garbage disposal in New York City, which has already led to initiation of a City Council investigation (*ENR*, Dec. 29, 1938, p. 804), resulted Jan. 10 in the indictment of Commissioner of Sanitation Carey by a Richmond County grand jury on charges of maintaining a nuisance.



POPE NAMED TO TVA BOARD

THE PRESIDENT has named James P. Pope, former Senator from Idaho, as a member of the Board of Directors of the Tennessee Valley Authority. He will fill out the unexpired term of Arthur E. Morgan, dismissed by the President last year from his post as chairman of the board. Pope was defeated in the Idaho Democratic primaries last fall for renomination to the Senate.

Pope was born in Louisiana and graduated from Louisiana Polytechnic Institute in 1906, subsequently studying law for three years at Chicago University; while there he studied under Harcourt Morgan, with whom he will be associated on the TVA board. He then began the practice of law in Idaho and was active in Boise civic affairs, becoming city attorney in 1914, in which position he served at attorney for the public utility commission. He later became mayor for the city and in 1928 was elected to the Senate.

Court Decision Asked On Conditional Bids

Contractor claims right to specify higher of his two low bids be used

Determination of the legality of a bid, entered subject to conditions, on a federal project is sought in a suit brought in the federal court at Little Rock by the Edward E. Morgan Co. of Jackson, Miss., against the U. S. District Engineer at West Memphis, Ark.

The Morgan company submitted two sets of bids Nov. 2 for construction of 1,472,000 cu.yd. of levee embankment on the north bank of the Arkansas River between Plum Bayou and Gillette, Ark. Individual bids were submitted on three items, and in addition a combination bid covering all three was submitted. The bids specified that if the individual bids were low, the combination bid was to be disregarded. Total of the individual bids was $137,000, while the combination bid was $108,000.

The individual bids, the complainant states, were lower than any other bids submitted, but the government offered the contract at the combination bid price. When the company refused to accept the contract at this price, the government prepared to award the contract to another bidder and also prepared to file claim against payment to the Morgan company on other federal contracts which it holds.

In the present suit the company asked the court to compel the district engineer to award it the contract and also to prevent the government from filing claims against other work now being carried out by the Morgan company.

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Governor Nice Highway Loses Its Name

The name of the Governor Nice Highway in Maryland, which runs from Baltimore to Havre De Grace and will eventually run to the Delaware line to connect with the du Pont Highway, has been changed to Philadelphia Road, U.S. 40. The federal Bureau of Public Roads has notified the state road commission that a PWA rule put into effect in September, 1937, prohibits naming any project for a living person. The highway, which was financed with PWA aid, was named after Governor Nice in Nov., 1937, but apparently the PWA ruling was not known of at the time.

A new governor was elected in Maryland last November.

Ellwood Johnson, superintendent of the new sewage disposal plant of Washington, D. C., is an enthusiastic proponent of power production from sludge gas; he has in operation the largest engine in this country—1,200 hp., and is studying the possibility of recommending another unit. Operating at full capacity, the present engine uses less than half of the gas produced by the digestors.

No armchair supervisor is **A. J. Lizee,** assistant to the commissioner of sanitation in New York City under whose direction the low cost but highly controversial land fill method for refuse disposal is being conducted (*ENR*, Sept. 1, 1938, p. 270). "A friendly chat with men on the job," says Mr. Lizee, "gives me more vital information than a handful of report sheets that are filed away and forgotten."

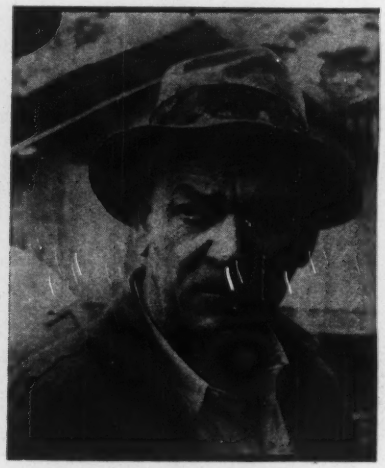
When this picture was taken, C. W. **Bowers,** director of public works, Richmond, Va., was getting the day's report on activities at a new municipally-owned river terminal project on which construction has just started. Public works administration has been a career for Mr. Bowers, who reached his present post as director after having first served as chief of every bureau in the department during the last 30 years.

MEN AT WORK

These are busy days for **Paul V. McNamee,** chemist of the Washington disposal plant, who is compiling data on the Genter sludge elutriation process recently placed in operation, as well as keeping a close watch on general plant performance. The Washington plant was the first in the United States to use elutriation for processing the sludge and sanitary engineers are waiting for results with interest.

Harry F. Scott, superintendent on the 11-mile Stanislaus tunnel being built by the Pacific Gas & Electric Co. to replace an old wooden flume, is one of three brothers, all successful tunnel builders on the Pacific Coast. Before joining the power company's staff many years ago, Mr. Scott, among many other projects, worked on the Twin Peaks and Duboce tunnels in San Francisco, California.

Frank K. Duncan, recently appointed chief engineer of the Baltimore department of public works, brings to that administrative post a service record in the city's engineering departments extending back 40 years. In appointing Mr. Duncan to succeed the late Bernard L. Crozier, Mayor Jackson said, "It is in line with my policy to promote whenever possible those who have given meritorious service."



Ohio Road Head Guilty Of Asking Contributions

Ivan R. Ault, acting state highway director of Ohio, was convicted Jan. 4 in common pleas court of soliciting contributions from highway department employees to finance Governor Davey's campaign in the Democratic primaries last fall. Ault was fined $300 and given a suspended 30-day jail sentence, but, within an hour after sentence was passed, Governor Davey pardoned him.

Ault was appointed acting highway director last November when highway director Jaster resigned. He was indicted on the solicitation charges before his appointment.

MEETINGS

NATIONAL SOCIETIES

American Society of Civil Engineers, annual meeting, New York City, Jan. 18-20, 1939.

National Public Housing Conference, annual meeting, Hotel Commodore, New York City, Jan. 27-28.

National Paving Brick Association, annual meeting, Deshler-Wallick Hotel, Columbus, Ohio, Feb. 1-3.

American Toll Bridge Association, annual convention, Coronado Hotel, St. Louis, Mo., Feb. 6-8.

American Concrete Contractors Association, National Concrete Masonry Association, Illinois Builders League; third annual concrete industries convention and exposition; Sherman Hotel, Chicago, Feb. 7–9.

Association of Highway Officials of North Atlantic States, annual convention, Hotel Pennsylvania, New York City, Feb. 15-17.

Engineering Institute of Canada, annual general and professional meeting, Chateau Laurier, Ottawa, Feb. 20–22.

Southwest Road Show and School, Coliseum, Wichita, Kan., Feb. 21–24.

The Asphalt Institute, twelfth national asphalt conference, Biltmore Hotel, Los Angeles, California, Feb. 27–March 3.

American Concrete Institute, annual convention, Roosevelt Hotel, New York City, Mar. 1-3.

American Society for Testing Materials, spring group meeting, Columbus, Ohio, Mar. 6-10.

Associated General Contractors of America, annual convention, Palace Hotel, San Francisco, Mar. 6-11.

American Road Builders Association, national exhibit and road show, Civic Auditorium, San Francisco, Mar. 6-11.

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REGIONAL AND LOCAL

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Bureau of Engineering Research and College of Engineering of the University of Texas, annual conference on foundations and soil mechanics, Austin, Feb. 3-4.

Louisiana Engineering Society, annual meeting, jointly with spring meeting of American Society of Mechanical Engineers, St. Charles Hotel, New Orleans, Feb. 23–25.

American Society of Civil Engineers, Mid-South Section, spring meeting, State College, Miss., Mar. 17.

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Short Course

Rutgers University: Course on waterworks and filter plant operation sponsored by the New Jersey Section of A.W.W.A. at New Brunswick, N. J., Jan. 16-28. Course on sewage disposal and plant operation sponsored by the New Jersey Sewage Works Association Feb. 6-18. Registration fee of $15 for each course. Enrollment applications should be sent to H. N. Lendall, College of Engineering, Rutgers University, New Brunswick, N. J.

MEN AND JOBS

H. R. Flint has been appointed director of the Idaho state highway bureau by Governor-elect Bottolfsen. Flint was formerly district highway engineer at Pocatello and for the past year has been superintendent of construction for an Idaho Falls contractor.

J. H. Stemmer, for eight years director of the Idaho state highway bureau, left that post Jan. 2.

W. G. Swigert has been made president of Pacific Bridge Co. to take the place made vacant by the death of the late Philip Hart. Swigert has been connected with the firm for many years and is the son of the firm's founder, C. F. Swigert, who died a few years ago.

W. E. P. Duncan, engineer of structures of the Toronto Transportation Commission, has been appointed general superintendent of the commission.

Frederick T. Mavis, head of the department of mechanics and hydraulics at Iowa State University, has been chosen to become head of the department of civil engineering at Pennsylvania State College when Elton W. Walker retires June 30.

J. Walter Ackerman, chief engineer and general superintendent since 1932 of the Consolidated Water Co. of Utica, N. Y., has been retained as chief engineer by the City of Utica, which bought the water system from the company last November. Ackerman is 71, and it was necessary to obtain a special dispensation from the New York State act which provides compulsory retirement at 70 for employees of the state and its political subdivisions. Ackerman has long been active in western New York municipal affairs. He was city engineer of Auburn from 1902 to 1908 and for twelve years thereafter chief engineer and superintendent of the Auburn waterworks. After a brief period in charge of the water, light and power department at Watertown, he became city manager there, remaining until 1930. He was briefly city manager of Fall River, Mass., and in 1932 joined the Utica Water Co. as chief engineer.

James E. Kerslake, sanitary engineer with the New York State Board of Health, has been appointed superintendent of the new filtration plant at Milwaukee, effective Feb. 1.

Herbert C. Schmitt who was engineer in charge of construction of the Milwaukee filtration plant, has been made assistant superintendent of operations at the plant.

Arthur Montzheimer has resigned the post which he has held since 1903 as chief engineer of the Elgin, Joliet & Eastern Ry. Montzheimer graduated from Dixon College of Civil Engineering and entered railway service in 1888 with the Chicago & Northwestern,

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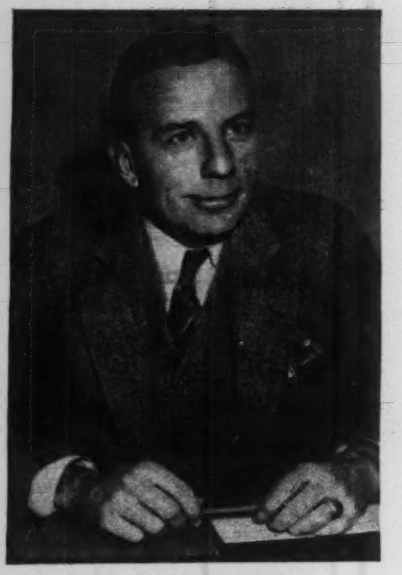


HARLOE IN NEW POST

MAJOR BARTLEY M. HARLOE of the Corps of Engineers is now assistant administrator and chief engineer of WPA. In his former post he was executive assistant to Col. F. C. Harrington, who is still his chief (see p. 1).

joining the engineering department of the line a year later. In 1891 he became assistant engineer and four years later superintendent of bridges and buildings. He held this post until he joined the Elgin, Joliet & Eastern in 1903. In addition to his post with the E.J.&E., he was from 1903 to 1910 chief engineer of the Chicago, Lake Shore & Eastern, and during the period of federal control of the railroads he was chief engineer of the Chicago, Milwaukee & Gary. He is a past president of the American Railway Bridge & Building Association.

F. H. MASTERS has been appointed chief engineer of the Elgin, Joliet & Eastern Ry., succeeding A. Montzheimer.

F. G. CAMPBELL has been appointed assistant chief engineer of the Elgin, Joliet & Eastern Ry.

H. C. PATTEN, comptroller of the Toronto Transportation Commission, which manages the publicly owned street car and bus system there, has been appointed general manager of the commission. A graduate of M.I.T. in 1908, Patten worked from 1909 to 1923 with the Boston and New York consulting firm of Jackson & Moreland. During his last three years with that firm he was in Toronto in connection with the arbitration and valuation proceedings which preceded the city purchase of the Toronto Railway Co., and, on the formation of the Transportation Commission, Patten became cost engineer. He was appointed comptroller a year later, in 1924.

W. E. P. DUNCAN, engineer of structures in the building department of the Toronto Transportation Commission, has been made general superintendent. The building department is being discontinued and its work assigned to a new department of way and structures.

FRED W. ALEXANDER, engineer of maintenance of way of the Canadian Pacific Ry., has been appointed assistant chief engineer. Alexander began his railway career in 1897 as an office boy for the Bangor & Aroostoock R. R. He joined the C.P.R. in 1903.

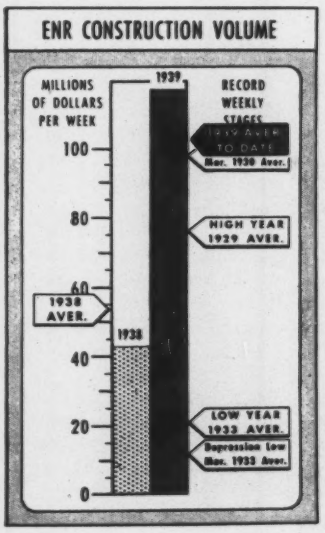
CONTRACTS AND CAPITAL

ENGINEERING construction awards for the week, $119,726,000, are the highest since May 15, 1930, and 180 per cent above the volume for the corresponding 1938 week.

Construction awards for the two weeks of 1939 total $206,721,000, an increase of 126 per cent over the volume for the first two weeks last year.

Public construction for the week is the highest on record, and 309 per cent above the 1938 week. PWA construction getting under way is responsible for the record public total. Private awards are 37 per cent below a year ago.

Public buildings, at $38,748,000, reached the highest weekly volume recorded by *ENR*. Sixteen large projects in 13 states, totalling $17,800,000, are responsible for this record. Five large projects in 5 states, totalling $11,200,000, are responsible for the highest bridge volume since May 4, 1933. In addition to these two classes of construction, waterworks, sewerage, industrial buildings, earthwork and drainage, and streets and roads top their totals both of a week ago and that recorded a year ago.



New capital for construction purposes for the week totals $10,493,000, a 5 per cent gain over the volume for the corresponding 1938 week. The current week's new financing is made up of $9,993,000 in state and municipal bonds, and $510,000 in corporate security issues.

New construction financing for the two weeks of 1939, $35,150,000, is 113 per cent above the volume for the first two weeks last year.

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CONTRACTS

(Thousands of dollars)

	Week Ending Jan. 13 1938	Jan. 5 1939	Jan. 12 1939
Federal	$2,478	$7,503	$16,502
State & Municipal	24,321	68,415	93,243
Total public	$26,799	$75,918	$109,745
Total private	15,791	11,077	9,981
TOTALS	$42,590	$86,995	$119,726
Cumulative 1939 (2 weeks)			$206,721
Cumulative 1938 (2 weeks)			$91,768

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1938 2 Wk.	1939 2 Wk.
NON-FEDERAL	$16,453	$35,150
Corporate securities	1,893	5,645
State & Mun. bonds	12,560	21,467
R.E.A. loans	.....	8,038
R.F.C. loans	2,000	.....
FEDERAL	.....	.....
TOTAL CAPITAL	$16,453	$35,150

FHA MORTGAGES

	Week Ending Jan. 8 1938	Dec. 31 1938	Jan. 7 1939
Selected for appraisal	$5,483	$12,185	$13,400*
Cumulative 1939 (1 week)			$13,400*
Cumulative 1938 (2 weeks)			$11,327

* Subject to revision.

ENR INDEX NUMBERS

		1913	1926
Index Base			
Construction Cost	Jan.	234.72	112.83
Building Cost	Jan.	196.24	105.99
Volume	Dec.	249	109

CONSTRUCTION REPORTS

Engineering and building projects by stage of progress and type reported by ENR correspondents

Construction projects reported in these pages covering the United States and Canada, are of these designated sizes: water supply, earthwork, waterworks, $15,000 and over; other public works, $25,000 and over; industrial buildings, $40,000 and over; other buildings, $150,000 and over; covering foreign construction, $500,000 and over.

They are classified in the following groups, named in the order of their publication: Water Supply . . . Sewers, Waste Disposal . . . Bridges, Grade Crossings . . . Streets and Roads . . . Earthwork, Waterways . . . Unclassified . . . Materials, Equipment . . . Public Buildings . . . Commercial Buildings . . . Industrial Buildings.

They are reported in these stages: proposed (except Streets and Roads); bids asked; low bidders (projects of $500,000 and over); contracts awarded. Where a previous report has been carried the issue date is noted on the current report. In each stage reports are arranged in geographical order, first by state then by city or town.

Symbols and abbreviations include:
† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD McGraw-Hill Construction Daily

WATER SUPPLY

PROPOSED WORK

Mass., Upton—Town Bd. Selectmen, Town Hall, will not construct water sys. $180,000. PWA. Project voted down. X. Henry Goodnough, Inc., 14 Beacon St., Boston, engrs. CD 9/21.

Mich., Whitehall—Election Mar. 13 to vote bonds, watermain in Division St. $27,000. Will ask WPA aid. A. Hansen, village engr.

Mo., New London—WW. $57,350. PWA gr. rescinded. E. A. Fulton, 3 South Meramec Ave., Clayton (St. Louis P. O.), engr. CD 11/22.

N. H., Stratford—Town, H. W. Ramsay, chn. Bd. Selectmen, Town Hall, will not construct water sys. Stratford Hollow Sect. $25,000. PWA. Project abandoned. G. H. Richardson, 20 South St., Littleton, engr. CD 12/9.

N. J., Morristown—Reservoir imprv., grading, cleaning, etc., $24,404. WPA. Burke, foot of 5th Ave., Paterson, WPA and owner's engr.

N. J., Parsippany—Watermains in various streets Lake Parsippany section of town. $21,581. WPA. W. Burke, foot of 5th Ave., Paterson, WPA and owner's engr.

Okla., Durant — Exten. watermains 10 blocks. $16,000. R. G. Clack, supt.

Pa., Mount Penn—Boro. purchasing Mt. Penn Suburban Water Co., imprv. plant, exten. distr. lines, etc. Over $15,000.

Man., Brooklands—Watermains and plant exten. $15,000.

N. B., Chatham—J. F. Kerr, municipality clk., chlorinating plant.

N. B., St. John—D. R. Smith, dir. P. Wks., change from chlorinating plant to chloramine plant. A. E. Berry, 235 Gainsboro Rd., Toronto, engr.

N. S., Halifax—Exten. water sys. $25,000. H. W. Johnston, City Hall, engr.

Ont., Arthur — A. L. Pinder, municipality clk., exten. water supply sys. and other imprvs.

Ont., Dundas—E. J. Mahoney, chn. Municipality, covering reservoir and piping additional spring water to town mains. $30,000. P. Utilities Comn., Dundas, engrs.

Ont., Kempville — Additional watermains, hydrants. $15,000.

BIDS ASKED

Bids Asked January 16

B. C., Nanaimo—City Clerk, 7 mi. (B. & S. electrically welded steel pipe or rein.-con. pressure pipe to bidders own specifications) to replace section South Fork pipe line-South Fork Dam to service reservoirs 1½ mi. from city. A. G. Graham, Nanaimo, engr. CD 12/7—ENR 12/15.

Bids Asked January 19

Kan., Osawatomie—Power and waterplant imprvs., new waterworks and pump building. $200,000. Excavation work to A. J. Forester, Ottawa, **$524. PWA.** CD 1/3—ENR 1/5.

★**Ky., Owensboro** — Steam generators for water and electric sys. Part of $1,041,016 PWA project. Black & Veatch, 4706 Broadway, Kansas City, Mo., engrs. CD 9/1—ENR 9/8.

Bids Asked January 20

Tex., Lockhart—N. H. Clark, mayor, water distr. supply sys. Trimble & Bandy, Littlefield Bldg., Austin, engr. CD 12/30—ENR 1/5.

Bids Asked January 23

Tex., Galveston—A. F. Levy, mayor, WW imprv., etc. Total est. $50,000. Freese & Nichols, Capps Bldg., Fort Worth, engr. CD 12/29—ENR 1/5.

Mass., Lawrence—City Clerk, City Hall, pump. sta., South Lawrence, Contr. 3. $15,000. PWA. H. E. Bailey, 177 State St., Boston, engr.

Bids Asked January 24

Minn., St. Paul—Units 1 and 2, water mains. $70,700. PWA. G. M. Shepherd, city engr. CD 12/23—ENR 12/29.

CONTRACTS AWARDED

Calif., Los Angeles—Metropolitan Water Dist., 306 W. 3 St., constructing Long Beach, Torrance and Compton lateral (feeder) pipe lines, to Western Pipe & Steel Co., 5717 Santa Fe Ave., **$366,317.** Bids 12/27, awarded 12/30. CD 12/15—ENR 10/22.

★**Calif., Los Angeles**—Metropolitan Water Dist., 306 W. 3 St., F. E. Weymouth, engr., Palos Verdes Reservoir, Spec. 289, etc., to W. E. Hall Co., 1025 Westminster Ave., Alhambra, **$588,960.** Bids 12/23, awarded 12/30. CD 12/21—ENR 12/15.

Calif., Oakland—J. Kimball, secy. East Bay Municipal Utility Dist., 512-16 St., furnishing, erecting 1 mg steel water tank, Pt. San Pablo Site, Richmond, Proposal 224, to Boiler Tank & Pipe Co., 800 75 Ave., **$11,470.** Bids 12/28. CD 12/21.

Del., Middletown—L. Levinson, mayor, and Council, WW imprvs., Contr. 2, deep well, pump, accessories, to Shannahan Artesian Well Co., Inc., St. Michaels, Md., **$6,100***** filters, accessories, Contr. 3, to Roberts Filter Co., Darby, Pa., **$8,570***rebuilding generator unit, Contr. 5, to Fairbanks, Morse & Co., 160 Varick St., New York, **$6,988.** Grand total $21,658. **PWA.** Bids 12/7. CD 11/28—ENR 12/1.

Fla., De Land — Contr. C, well, to I. H. Smith Co., Barnett Bldg., Jacksonville, **$58,698. PWA.** Bids 12/15. CD 12/8.

Fla., Fort Pierce—WW. exten., to S. T. Stausfield, Wauchula, **$72,996** est. $105,182, and to Layne Atlantic Co., New Monroe Bldg., Norfolk, Va., **$74,349** est. $100,404. **PWA.** Bids 12/23. CD 12/15.

Fla., Gainesville—Contr. A, tank for WW. imprvs., to Chicago Bridge & Iron Wks., 1500 N. 50 St., Birmingham, Ala., **$38,180***** Contr. B, mains, to Kelly Constr. Co., Miami, c/o J. B. Mobley, city mgr., **$27,872***Contr. C, reservoir and tank, to McLean Constr. Co., Gainesville, **$17,449.** Grand total $83,501. Est. $106,300. **PWA.** Bids 12/19. CD 12/7.

Fla., Haines City—Unit A of WW imprvs., to R. D. Cole Mfg. Co., Newman, Ga., **$17,185;** Contr. 1, wells, to Stevens Southern Co., c/o W. A. Smith, engr., 1205 Lynch Bldg., Jacksonville, **$13,995. PWA.** Bids 12/9. CD 12/2.

Fla., Jacksonville—Fdns. for 500,000 gal. steel water tank on South Side and 1 m.g. steel water tank in Main City near Waterworks Park, to I. H. Smith Co., Barnett Bldg., **$14,070;** erecting tanks, to Chicago Bridge & Iron Co., 37 W. Van Buren St., Chicago, Ill., **$119,000.** W. E. Shedd on, city engr.

Fla., Macclenny—WW., to I. H. Smith Co., Barnett Bldg., Jacksonville, **$49,101.** Est. $45,600. **PWA.** Bids 12/24 CD 12/19.

Fla., Miami Springs — Contr. A, elevated tank, to Taylor Iron Wks. & Supply Co., Macon, Ga., **$9,900***Contr. B, tank fdns., to Langston Constr. Co., Insurance Security Bldg., Miami, **$3,725***Contr. C, drilling fire wells, to Kiser Drilling Co., 288 N.W. 30 St., Miami, **$3,752.** Grand total $17,377. Est. $17,400. **PWA.** Bids 12/9, awarded 12/23. CD 11/4—ENR 11/10.

Fla., Palatka—Contr. A, 3 wells, 3 pumps, pipe, to Stevens-Southern Co., Jacksonville, **$9,316.** Est. $10,000. **PWA.** Bids 12/13. CD 12/6—ENR 12/8.

Ga., East Point—Water tank, to R. D. Cole Mfg. Co., Newnan. Est. **$26,000. PWA.** Bids 12/19. CD 12/8.

Ga., Milledgeville—Watermains, to Hornbuckle & Cole, Mortgage Guarantee Bldg., Atlanta, **$20,300. PWA.** Bids 12/20. CD 12/14.

Ga., Ringgold—Water and sewer imprvs., to Smith-Pew Constr. Co., 786 W. Peachtree St. NW, Atlanta. Est. **$19,300.** PWA. Bids 12/15. CD 12/7.

Ga., Summerville—General construction WW imprvs., to J. R. Cothran, 3472 Piedmont Rd., N.E., Atlanta, **$34,097.** Est. $40,000. Bids 12/22. CD 12/8.

Idaho, Georgetown—J. H. Goodnight, city clk., 1st unit drilling, casing well, to J. H. Peterson, Woods Cross, Utah, **$825.** Total est. **$36,364. PWA.** CD 11/7—ENR 11/10.

Idaho, St. Charles—General contract water sys., to N. Fugal, Pleasant Grove, Utah, **$14,029;** material, to Pacific States Cast Iron Pipe Co., Provo, Utah, **$27,454.** CD 12/13—ENR 12/15.

Idaho., Weiser—Water sys., to West Coast Contr. Co., Lloyd Bldg., Seattle, Wash., **$40,578.** Est. $60,000. Bids 12/30. CD 12/28.

†Ill., Chanute Field (Rantoul)—Con. Q. M., 2 deep wells, to Harris Harmon Well Co., 208 Front St., Mineola, N. Y., **$5,940.** Bids 12/28. CD 12/16—ENR 12/22.

Ind., Morocco — WW imprvs. and pump equip., to Layne-Northern Co., Inc., Mishawaka, **$2,336** and **$900** respectively***pump house, to Mark Supply Co., Valparaiso, **$2,500***distr. sys., to Orfei Contg. Co., Melrose Park, Ill., **$11,274.** Grand total $17,010. CD 9/8—ENR 9/15.

Ia., Chariton—WW. imprv., to Dobson & Robinson, 824 1st Natl. Bank Bldg., Lincoln, Neb. **$20,406;** tank, tower, to Pittsburgh-Des Moines Steel Co., 1015 Tuttle St., Des Moines, **$21,225.** Bids 12/21. CD 12/13—ENR 12/15.

Ia., Farmersburg—Well for WW, to Sersland & Winslow, Decorah, **$1,185.** Est. $25,840. **PWA.** Bids 12/22. CD 12/8—ENR 12/15.

Ia., Mt. Ayr—WW imprv., Sect. 1, to J. D. Armstrong, Ames, **$21,075** Sects. 2 and 3, to Lippert Bros., Boone, **$36,359.** Bids 12/23, awarded 12/26. CD 12/16.

Kan., DeSoto—Water treatment plant, to Layne-Western Co., BMA Bldg., Kansas City, Mo., **$4,843.** Bids 12/30, awarded 1/3. CD 12/20—ENR 12/22.

Kan., Ellsworth—WW. sys. addn., to Layne Western Co., BMA Bldg., Kansas City, Mo., **$3,635.** Bids 12/27. CD 12/22.

Kan., Topeka—Pump. sta., sewers, to Kaw Paving Co., Crane and N. Topeka Sts., **$49,380.** Est. $40,000. **PWA.** Bids 12/21. CD 12/20.

Ky., Corbin—Steel tank, to Chicago Bridge & Iron Co., Rockefeller Bldg., Cleveland, O., **$15,525;** fdn., to Stanley Smoot & G. J. Karr, Corbin, **$2,208.** Bids 12/28. CD 12/22.

Ky., Flatwoods — Contr. 2, steel tank for WW., to Chicago Bridge & Iron Wks., Rockefeller Bldg., Cleveland, O., **$8,585. PWA.** CD 10/19—ENR 10/27.

Ky., Science Hill—Drilling water supply well, to Stanhope Weidman Co., Lexington, $5 per lin. ft. of depth. **PWA.** Bids 12/12. Bids later on balance WW imprv. Total est. $44,555. CD 12/7.

Mass., Chicopee — Bd. Water Comrs., City Hall, Contr. 1, water treatment plant addn., to Casper Ranger Constr. Co., 6 Newton St., Holyoke, **$40,714.** Award subject to **PWA** approval. Bids 12/22. CD 12/14.

Mich., Beulah—Well, to R. F. Dunbar & Sons, Delta, O., **$2,070.** Bids 9/26. CD 9/16.

Mich., Grand Beach—General contract WW, to A. F. Hartigan, 5614 Dorchester Ave., Chicago, Ill., **$49,378. PWA.** CD 11/7—ENR 11/10.

Mich., Grosse Pointe Farms—Watermains, to Morgan & Teetaert Constr. Co., Grosse Pointe, **$9,337.** Bids 12/15. CD 12/8.

Mich., Ludington — C.I. intake pipe for water sys., to Love Constr. & Eng. Co., Muskegon, **$47,200. PWA.** CD 11/17—ENR 11/10.

Mich., Royal Oak—Royal Oak Twp., c.i. distr. lines, to C. Nelsen, 117 Phillips St., **$56,501. PWA.** B. Buchanan, Inc., Pontiac, engrs. Bids 12/24. CD 12/14.

Minn., La Crescent—Mains, to H. H. Frankamp, Mankato, **$25,676***residence, pump house, to F. W. Morrison & Son, La Crosse.

Water Supply (Continued)

Wis., $6,417***pump, to R. K. Culbertson, 811 Wesley Temple Bldg., Minneapolis, $1,523*** meters, to Cochrane-Sargent Co., 300 Broadway, St. Paul, $503. Grand total $34,119. Est. $49,446. **PWA.** Bids 11/2.

Minn., New Prague — Steel tank, etc., to Pittsburgh-Des Moines Steel Co., 1015 Tuttle St., Des Moines, Ia., **$14,990. PWA.** Bids 12/23. CD 12/14.

Minn., St. Paul—Filtration plant addn., miscellaneous machinery, to Okes Constr. Co., 1501 E. First Natl. Bank Bldg., **$47,462. PWA.** Bids 12/20. CD 12/14.

Miss., Jackson—Mississippi State College, deep well, pumphouse, to Layne Central Co., 1993 Chelsea St., Memphis, Tenn., **$21,960.** Est. $22,900. **PWA.** Stevenson & Johnston, Starkville, engrs. Bids 12/2.

Mo., Macon—C. R. Shale, mayor, imprvs., addns. to WW and municipal light and power plant. Approx. $195,000 PWA gr. Excavating, razing old building, to Ebbe Constr. Co., Trenton, **$5,145.** Baumes Eng. Co., Railway Exch. Bldg., St. Louis, engrs. CD 9/2—ENR 9/8.

Neb., Lexington—WW imprvs., two 500 gal. gravel treated wells, pump houses, mains, etc., **WPA. $16,000.**

Neb., Lincoln—Watermain in Huntington Ave., to G. L. Vlasnik, 1721 S. 22nd St., **$4,292;** removing old boilers, to Newberg & Bookstrom, 2105 M St., **$900. PWA.** CD 12/1.

N. J., East Orange—Town, imprv. water reserve, constructing fire lanes, drainage, roads, etc., **WPA. $335,019.**

N. J., Montclair—12 in. watermain in Valley Rd., **WPA. $50,479.**

N. J., Parsippany—Boro, watermains in various streets, Rainbow Lakes Sect., **$24,817. WPA.** W. Burke, foot of 5th Ave., Paterson, WPA and owner's engr.

★ **New York**—Bd. Water Supply, 346 Bway., New York, Contr. 321, southerly portion Rondout-West Branch Tunnel, West Branch Bypass Tunnel and northerly portion West Branch-Kensico Tunnel, Delaware Aqueduct, etc. at West Branch Reservoir, Kent and Carmel, to Frazier-Davis Constr. Co., 51 E. 42 St., New York and 1319 Macklind St., St. Louis, Mo., **$11,924,450.** Bids 12/20. CD 12/21—ENR 12/29.

N. Y., Binghamton—Additional waterworks, c.i. main, Gerard Ave., **WPA. $15,000** plus.

N. Y., Cornwall-on-Hudson—Water supply, Contr. 2, to Toill & Cuozzi Contg. Co., 124 Park Hill Ave., Yonkers, **$166,500. PWA.** CD 11/3—ENR 11/10.

N. Y., Rochester — Additional watermains, Pullman Ave., **WPA. $15,000** plus.

N. C., Asheboro—WW. and sewer exten., to Wanamaker & Wells, Inc., Orangeburg, S. C., **$24,548***pump, to Fairbanks Morse Co., Charlotte, **$814***tank and towers, to R. D. Cole Mfg. Co., Newman, Ga., **$33,250.** Grand total $58,607. Est. $58,200. **PWA.** Bids 12/21. CD 12/19.

N. C., Drexel—Water and sewer imprv., to Reed & Abee, Inc., Asheville, **$63,244;** street imprv., to L. Ellis, Greensboro, **$53,100.** Est. $77,500. **PWA.** Bids 12/20. CD 12/8—ENR 12/15.

N. C., Newton—See "Sew. & W. Disp."

N. C., Pembroke—Contr. 3, general contract water and sewer sys., to Elliott Building Co., Hickory, **$43,350;** Contr. 2, tank, to Taylor Iron Wks., Macon, Ga., $8,865. Bids 12/20. CD 12/9—ENR 12/15.

N. D., Grand Forks—Raw water pumps and pump house, to Northern Constr. Co., 509 S. 3 St., **$13,248. PWA.** Bids 12/13. CD 12/7.

O., Akron—Contr. 307, waterworks sys., to Shullo Constr. Co., 1200 Home Ave., **$66,340.** Total est. $136,000. **PWA.** Bids 12/1. CD 11/29.

O., Columbiana — Village, water softening unit at WW. plant, to E. Newell, Columbiana, **$15,800.** Est. $17,600. Awarded 12/29. CD 10/5—ENR 10/13.

O., Columbus—Pump. sta. imprv., to Potters Lumber Co., Bway., East Liverpool, **$7,990.** Total est. $66,425. PWA. Chester Eng. Co., Century Bldg., Pittsburgh, Pa., engrs.

O., East Liverpool—Pumps for electrification WW sys., to Dravo Corp., Neville Island, Pittsburgh, Pa., **$13,974;** booster station, to Potters Lumber Co., East Liverpool, **$7,990** Est. $60,000. Bids 12/22, awarded 12/29. CD 12/20.

O., Hicksville—WW sys., to Chicago Bridge & Iron Wks., 37 W. Van Buren St., Chicago, **$15,925.** Est. $31,000. **PWA.** Burgess & Niple, 568 E. Broad St., Columbus, engrs.

O., Holloway—Water treatment plant, to F. H. Vincenzo, Holloway, **$11,807.** Est. $14,000. CD 8/24—ENR 9/1.

O., Lorain—Waterlines for waterworks tunnel, to S. Trifilletti, 1518 Oberlin Ave., Lorain, **$46,701.** Total est. $150,000. **PWA.** Bids 12/17. CD 12/9.

O., Lorain—Brick tunnel for WW, to Randall & Cooper, Sixth St., **$45,200.** Est. $50,000. Bids 12/17. CD 12/9.

Okla., Altus—Repairing dam and filter plant at Lake Altus, **WPA. $36,000.** W. L. Benham, 431 Main St., Oklahoma City, engr.

Okla., Duncan—Exten. watermains, **WPA. $15,000.** J. B. McLendon, Duncan, engr.

Okla., Tonkawa—Watermain exten., **WPA. $17,000.** E. E. Davis, Tonkawa, engr.

Ore., Corvallis—Steel pipe line, to Empire Constr. Co., 234 N.E. 28 Ave., Portland, **$119,-052.** Est. $165,000. Bids 12/19, awarded 12/29. CD 12/5—ENR 12/8.

Ore., Svensen—Wickiup Power Dist., H. E. Lawrence, secy., Grange Hall, concrete dam and controls and clearing and grubbing reservoir supply, distr. pipe line, etc., Schedule 1, to O. K. Tittle, Tillamook, **$3,458;** Schedules 2 and 3, to Oho & Dybzik, Route 2, Astoria, **$36,033.** Bids 12/12, awarded 12/30. CD 12/2.

Pa., Bethlehem—Bethlehem Water Auth., constr. 12,000 ft. pipe line from Illicks Mills to control sta., to Malone & Sons, Lancaster, **$124,860.** Total est. over $500,000. Owner retained Lovelace & Spillman, archts., Bethlehem, to prepare plans for laboratory and chemical storage at dam site. R. L. Fox, city engr. CD 12/13—ENR 12/15.

Pa., Fox Chapel—H. C. Meyers, boro pres., WW sys., Contr. 1, water lines, to F. Kukurin, Wilmerding, **$9,372***Contr. 2, to J. W. MacLaughlin, Law Bulletin Bldg., Pittsburgh, **$93,275***Contr. 3, to Pittsburgh Des Moines Steel Co., Neville Island, Pittsburgh, **$14,620.** Grand total $217,367. Total est. $549,280. Bids 12/29. R. H. Boyles, boro secy. CD 12/2—ENR 12/22.

Pa., Kenhorst (Reading P. O.)—Boro, exten. c.i. watermains, resurfacing streets, **WPA. $24,000.** Boro Engr. Dpt., Boro Hall, engrs.

Pa., Pittsburgh—F. M. Roessing, dir. Dpt. P. Wks., Contr. 5, water resrevoir tank, to Hunter Steel Co., Neville Island, **$28,960.** Bids 12/2. CD 11/30.

Pa., Pittsburgh—City, F. M. Roessing, dir., Dpt. P. Wks., Contr. 2, WW sys., furnishing, laying 36 in. c.i. pipe line, appurtenances, to Ben Constr. Co., 101 Hargrave St., **$85,511.** Bids 12/9. CD 12/2.

Pa., Pittsburgh—F. M. Roessing, city dir., filter houses at 16 and 12 wards, to Ley Building Co., 513 Magee Bldg., **$39,190.** J. Croak, city engr.

S. C., Rock Hill — Contr. C, pumps and motors, to Fairbanks Morse & Co., 515 Whitehall St., Atlanta, Ga., **$3,302.** Est. $3,000. **PWA.** Bids 11/30, awarded 12/7. T. C. Marshall, city engr.

S. C., St. Stephens—Contr. 1, deep well, to Virginia Mchy. & Well Co., 1319 E. Main St., Richmnod, Va., **$3,207***Contr. 2, contingencies, to Robert Lee, Inc., Myrtle Beach, **$1,567** ***Contr. 3 to Taylor Iron Wks., Columbia, **$6,375***Contr. 4, distr. sys., to Robert Lee, Inc., Columbia, **$15,018.** Grand total $26,167. **PWA.** Bids 11/25.

Tenn., South Fulton—WW distr. sys., Contr. B, general construction, to Volz Constr. Co., Ripley, **$54,079;** Contr. C, elevated tank, to Taylor Iron Wks., Macon, Ga., **$8,940. PWA.** Bids 9/9, awarded 12/29.

Tex., Bryan—E. E. Yeager, mayor, WW imprv., supply sys., etc., to Texas Automatic Sprinkler Co., 2330 Summers St., Dallas, **$285,000;** 3 deep wells, etc., to Pat O'Day Drilling Co., Houston, **$39,500.** Bids 12/27. CD 12/19.

Tex., Groesbeck—J. F. Bradley, mayor, WW. imprv., etc., to Johnson Co., Amicable Bldg., Waco, **$33,178.** Est. $35,000. Bids 12/27. CD 12/9—ENR 12/15.

Tex., Itasca—E. D. H. Farrow, mayor, water well, meters, pump, piping appurtenances, to Layne-Texas Co., 6931 Hsbg., Houston, and W. H. Stevens, 1310 Cooper St., Fort Worth, and c/o owner, **$15,500.** Est. $19,160. Bids 12/19. CD 12/12.

Tex., Sonora—Lowering waterlines, curbing, guttering, asphalt streets throughout city, etc., "Purchase and Hire" plan. **$136,301. WPA.**

Tex., Temple—L. N. Powell, city mgr., WW and sewer imprvs., to Williams & Whittle, 5422 Mockingbird Lane, Dallas, **$209,324,** est. $220,000; WW imprvs., filtration plant, supply lines, to Chicago Bridge & Iron Co., 37 W. Van Buren St., Chicago, Ill., and 1700 Walnut St., Phila., Pa., **$82,575.** Est. $110,000. Bids 12/29. CD 12/19—ENR 12/22.

Tex., Tomball—A. G. Hager, mayor, WW exten., to Koller Constr. Co., 518 Tradesmen Bank Bldg., Oklahoma City, Okla., **$17,565.** Bids 12/24. CD 12/21.

Tex., Wink — WW. sys. imprvs., to J. B. Winslett, 4902 Eastside Ave., Dallas, **$43,760.** Est. $60,000. Bids 12/16. CD 12/7.

Utah, Clarkston—Labor for exten., alterations distr. sys. supply line, to Wheelwright Constr. Co., Ogden, **$11,000;** c.i. pipe and fittings, to Waterworks Equipment Co., 245 W. 2nd South St., Salt Lake City, **$5,063.** Est. $30,000. **PWA.** Bids 12/16. CD 12/13.

Utah, Hurricane—Town, exten., alterations water sys., to Scholzen Products Co., Hurricane, **$3,140. PWA.** Bids 12/6. CD 12/5.

Utah, Providence—Labor for water sys., to T. L. Kloepfer, Logan, **$21,000***c.i. pipe, fittings, to Waterworks Equipment Co., 245 W. 2nd South St., Salt Lake City, **$10,050***steel pipe, to Crane Co., 307 W. 2nd South St., Salt Lake City, **$6,000***steel pipe, to Hardesty Mfg. Co., 631 S. 3rd West St., Salt Lake City, **$14,000.** Grand total $51,050. Est. $68,000. **PWA.** Bids 12/20.

Va., Richmond—Contr. 8, general contract pump plant, to Bickelhaupt, Inc., 1737 Summit Ave., **$67,939.** Est. $49,250. **PWA.** Bids 12/12, awarded 12/29. CD 11/30.

Wash., Tacoma—Bd. Contr. & Awards furnishing, installing c.i. pipe, to Paine & Gallucci, 1521 S. Grant St., **$156,432.** Est. $192,-000. Bids 12/19. CD 12/8.

Wash., Tacoma—Bd. Contr. & Awards air valves, to Crane Co., 419 2 Ave. S., Seattle, **$1,632***check valves, to Chapman Valve Co., represented by H. H. Smith, Smith Tower, Seattle, **$230***gate valves, to Pacific Waterworks Supply Co., Atlantic St. Dock, Seattle, **$12,822***concrete pipe, to American Concrete & Steel Pipe Co., 459 E. 15 St., $207,045. Grand total $221,729. Bids 12/15. CD 12/2—ENR 12/8.

Wash., Tacoma—Bd. Contr. & Awards exten. tide flats trunk main No. 2 across 21 St. bridge to connect with tideflats main No. 1 at E. 11 St., to Steel Tank & Pipe Co., 518 N.E. Columbia Blvd., Portland, Ore., **$158,334.** Bids 12/29. CD 12/19—ENR 12/22.

Wash., Tacoma—Bd. Contr. & Awards 16,-580 ft. 58 in. concrete pipe, to American Concrete & Steel Pipe Co., 459 E. 15 St., **$384,146;** drilling 2 or more deep wells, to E. B. Enloe, 5514 N.E. Halsey St., Portland, Ore., **$36,995.** Bids 12/27. CD 12/16.

Wash., Vancouver — Replacing Ellsworth supply line with wood stave pipe, relief labor. Est. **$162,091. WPA.** Pipe, to National Pipe Co., 907 S.W. Front St., Portland, Ore., $33,-230. CD 11/11—ENR 11/17.

Wis., Elkhorn—Light & Water Comn., water softening and iron removal plant, to Brellenthin Truck & Shovel Service, Inc., Elkhorn, **$55,714. PWA.** Bids 12/22. CD 12/15.

Ont., Grimsby—North Grimsby Twp., watermain along Hy. 8, to Carrol-Sharp Constr. Ltd., 43 Scott St., Toronto, **$18,000.** Est. $20,000. Engineer, c/o T. W. Allan, Grimsby.

Sask., Regina—Prairie Farm Rehabilitation Assn., 910 McCullum-Hill Bldg., general testing equip. for reservoir in connection with Caron Water storage project, to Bird Constr. Co., Ltd., Regina. Est. **$25,000.** Private plans. CD 12/1.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Calif., Bakersfield—City, completing plans sewage treatment plant. $130,000. J. Holfelder, city engr.

Calif., Brentwood — Brentwood Sanitary Dist., election Feb. 14 to vote on formation of district to finance sanitary sewers, sanitary disposal plant. Over $25,000. J. S. Bates, 3134 Eton Ave., Oakland, engr.

Calif., Carmel—Carmel Sanitary Dist., Sundial Court Apt. Bldg., temporarily withdrew bids to have been opened Jan. 4, sanitary trunkline, outfall sewerage work imprvs., etc. C. C. Kennedy, 604 Mission St., San Francisco. CD 12/21—ENR 12/29.

Calif., Fresno—6 and 8 in. vitr. sewers, concrete manholes, etc., various streets. Over $25,000. J. Vincenz, city engr.

Conn., Fairfield—Incinerator, garage, paving, grading. $110,300. T. F. Bowe, 110 William St., New York, engr. CD 8/4—ENR 8/11.

Ill., Geneseo—Indefinitely postponed construction sewage treatment plant. $71,000. Bids not opened Dec. 12 as planned. Warren & Van Praag, Inc., 415-418 Millikin Bldg., Decatur, engrs. CD 12/7.

★ **Ind., Fort Wayne**—Bd. P. Wks., R. G. Beams, chn., bids soon Maumee interceptor, $241,557. Bids later on Spy Run and St. Joseph interceptor, $276,208; Nebraska Relief Sewer, $100,000; Superior Berry interceptor, $940,951; Statler-Harvester Branch, $18,860; Indian Village branch, $21,585; Baldwin branch, $17,930; Tecumseh-Morton sewage lift station, $38,800; Rolling Mill branch, $40,000; sewage treatment plant, $1,400,000. Bids early spring on sewage treatment plant. PWA. C. Cole, 1030 West Wayne St., Fort Wayne, consult. engr.

Ia., Waterloo—Bids in February, settling and filter tanks, drying beds in $500,000 sewage treatment and disposal plant. C. T. Wilson, city engr.

Mass., Worcester—W. A. Bennett, mayor, City Hall, sewers, various streets. $200,000. PWA.

Mich., Rochester—Primary treatment plant and sludge digestion tanks, concrete construction. $87,500. PWA. Ayres, Lewis, Norris & May, 506 Wolverine Bldg., Ann Arbor, engrs. CD 9/26.

Minn., Chaska—Will not construct sewage plant. $112,318 PWA gr. not accepted. Druar & Milinowski, Globe Bldg., St. Paul, engrs. CD 12/12—ENR 12/15.

Mo., Richland—Sewers and disposal plant. $27,273 PWA gr. rescinded. R. N. Keefe, 2018 Franklin St., Springfield, engr. CD 11/28.

N. J., Butler—Boro, 7,475 ft. sanitary sewers, appurtenances, various streets. $34,565. WPA. W. Burke, foot of 5th Ave., Paterson, WPA and owner's engr.

N. J., Irvington—Excavating, storm sewers various streets, WPA. $95,410.

N. J., Morris Plains—Boro, sewers, drainage sys. in various streets. WPA. $25,176.

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

SOUTH PENN HIGHWAY, PENNSYLVANIA

OWNER: Pennsylvania Turnpike Commission, W. A. Jones, chairman; R. B. Stone, engineer.

PROJECT: Constructing Section 19 of turnpike in Hopewell, Upper Mifflin, Lower Mifflin and Upper Frankfort Townships, Cumberland County, consisting of grading, drainage, and construction of a number of reinforced concrete arches and bridges from a point approximately 2.5 mi. north of Newburg at Station 153 plus 00 to a point about 1.75 mi. north of Newville at Station 706 plus 00. Stipulated contract time is 275 calendar days; highway transportation is available.

BIDS: Twenty-three bids were received Oct. 26, 1938, ranging from the contract low of $458,058 to $747,249. Minimum labor rates are as follows: Skilled, $1.00 per hr.; semi-skilled, 65c. per hr.; common, 52½c. per hr.

LOW BIDDERS:

1. L. M. Hutchison, Mt. Union, Pa. (contract) .. $458,058
2. Adam I. Eidemiller, Greensburg, Pa..... 494,205
3. F. D. Kessler, Inc., Northumberland..... 499,703

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Clear., grubb	L.S.	$3,000.00	$8,000.00	$7,000.00
2. Cl. 1 excav	831,256 c.y.	.26	.26	.30
3. Cl. 2 excav	13,909 c.y.	1.25	1.50	1.50
4. Borrow excav	11,145 c.y.	.27	.30	.28
5. Reinf. conc. W. surf.-br. floors	1,098 s.y.	2.00	2.25	1.50
6. Cl. A conc	3,026 c.y.	18.00	19.00	17.00
7. Cl. B conc	5,709 c.y.	14.00	17.50	14.00
8. Pl. steel bars	492,751 lb.	.04	.045	.04
9. Pl. struct. steel	2,115 lb.	.10	.08	.08
10. Stone backfill struct	264 c.y.	2.00	3.00	3.00
11. Stone backfill springs and unst. mat	2,355 c.y.	1.50	3.00	2.00
12. Cement rubble masonry	8 c.y.	15.00	14.00	12.00
13. Dry rubble masonry	2 c.y.	12.00	12.00	10.00
14. Grouted stone slope wall	16 c.y.	15.00	14.00	14.00
15. Type RS inlets	48 ea.	70.00	70.00	50.00
16. Type RS inlets without sump	17 ea.	100.00	60.00	50.00
17. Cor. metal pipe, 15-in	208 l.f.	2.00	1.60	2.00
18. Cor. metal pipe, 18-in	184 l.f.	2.15	1.80	2.00
19. Cor. metal pipe, 24-in	478 l.f.	3.00	3.00	3.00
20. Asph. coated C.M.P. 42-in. 8-ga	148 l.f.	8.00	7.00	10.00
21. Asph. coated C.M.P. 48-in. 8-ga	142 l.f.	10.00	8.00	12.00
22. Asph. coated C.M.P. 54-in. 8-ga	302 l.f.	12.00	10.00	14.00
23. Extra strength r.c.c. pipe 15-in	1,710 l.f.	2.25	2.25	2.50
24. Extra strength r.c.c. pipe, 18-in	2,288 l.f.	2.75	2.75	3.00
25. Extra strength r.c.c. pipe, 24-in	1,390 l.f.	4.00	4.00	4.00
26. Extra strength r.c.c. pipe, 30-in	490 l.f.	6.00	5.00	6.00
27. Extra strength r.c.c. pipe, 36-in	520 l.f.	8.00	7.00	9.00
28. Extra strength r.c.c. pipe, 42-in	116 l.f.	10.00	9.00	11.00
29. Extra strength r.c.c. pipe, 48-in	136 l.f.	14.00	12.00	14.00
30. Pl. conc. vit. clay pipe, 15-in	4,032 l.f.	1.40	1.75	2.00
31. Pl. conc. vit. clay pipe, 18-in	2,096 l.f.	1.75	2.00	2.00
32. Pl. conc. vit. clay pipe, 24-in	442 l.f.	3.00	3.00	2.50
33. Pl. conc. vit. clay pipe, 30-in	10 l.f.	5.00	5.00	5.00
34. C.M.P. relaid, 18-in	58 l.f.	2.00	1.50	1.00
35. C.M.P. relaid, 24-in	12 l.f.	2.50	1.50	2.00
36. C.M.P. relaid, 30-in	13 l.f.	3.00	1.50	2.00
37. Stone underdrain	1,300 l.f.	.60	.40	.50
38. Perf. vit. clay tile underdrain, 8-in	4,410 l.f.	1.00	1.00	1.00
39. Perf. vit. clay tile underdrain, 6-in	1,000 l.f.	.85	.80	.50
40. Tile outlets, 6-in	50 l.f.	.75	.60	.50
41. Tile outlets, 8-in	220 l.f.	.90	.70	.75
42. Cr. aggr. — extra depth tile underdrain	50 c.y.	2.00	2.50	3.00
43. Segmental grouted rubble spillway	16 c.y.	20.00	3.00	16.00
44. Type 1-C guard fence	864 l.f.	.60	.45	.50
45. Type 1-C end anchorages	8 ea.	12.00	10.00	15.00

MAHONING CREEK DAM, PA.

OWNER: Corps of Engineers, U. S. Army; U. S. Engineer Office, Pittsburgh, Pa.

PROJECT: Construction of Mahoning Dam on Mahoning Creek, about 4 mi. northwest of Dayton, Pa. and about 24 mi. northeast of Kittanning, Pa. Dam is to be of concrete gravity type, and contract includes appurtenant structures, complete. Structure will be 993 ft. long and 160 ft. high central spillway type, containing 232,000 cu.yd. of concrete. Government will furnish the cement and most other permanent materials. Stipulated contract time is 1,180 calendar days. Liquidated damages are $300 for each calendar day of delay until the work is put in a safe and practical operating condition, and thereafter the damages are $75 for each calendar day of delay until all remaining work under the contract is completed and accepted. Two railroads have lines near the dam site; the Pittsburgh & Shawmut Railroad passes 2½ mi. north, and the Baltimore & Ohio passes 4 mi. southeast, with sidings at Dayton. The site is reached by an existing unimproved road from McCrea Furnace. Minimum labor rates are as follows: skilled, $1.30 per hr.; semi-skilled, 90c per hr.; common, 75c per hr.

BIDS: Ten bids were received Dec. 17, 1938, ranging from the contract low of $2,646,610 to $3,944,840.

LOW BIDDERS:

1. Dravo Corp., Pittsburgh (contract).....$2,646,610
2. Bates & Rogers Construction Corp., Chicago. 2,802,306
3. McCarthy Improvement Co., Davenport, Iowa 2,938,604

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Cofferdams	L.S.	$87,000.00	$180,000.00	$100,000.00
2. Clearing dam site	L.S.	4,000.00	10,000.00	16,000.00
3. Common excav	90,000 c.y.	.80	1.25	1.20
4. Rock excav	115,000 c.y.	2.40	2.00	1.55
5. Special rock excav	12,000 c.y.	3.40	3.50	3.50
6. Line drilling	36,000 s.f.	.40	.80	.90
7. Rock treatment (one coat) (1 sq.=100 s.f.)	400 sq.	6.00	3.00	1.77
8. 8-in. vitrified tile	200 l.f.	1.00	1.25	2.00
9. Compacted backfill	40,000 c.y.	.80	.70	.60
10. Random fill	18,000 c.y.	.50	.40	.40
11. Rock paving	460 s.y.	4.00	5.50	5.20
12. 2-in. grout holes (percussion)	4,500 l.f.	.70	.55	.60
13. 2-in. grout holes (core)	4,500 l.f.	1.50	1.75	1.50
14. 3-in. holes in rock	4,000 l.f.	1.00	2.00	.80
15. 30-in. inspection holes	220 l.f.	30.00	25.00	20.00
16. 6-in. core holes	200 l.f.	7.00	3.00	4.00
17. Hauling and storing cement	305,000 bbl.	.15	.05	.30
18. Reinf	1,000,000 lb.	.05	.04	.06
19. Pressure grouting	18,000 sack cem.	1.50	.65	.70
20. Conc., class A	4,400 c.y.	20.00	17.45	20.00
21. Conc., class B	72,000 c.y.	8.50	5.85	12.00
22. Conc., class C	232,000 c.y.	4.40	5.85	4.38
23. Conc., class B in stilling weir	9,600 c.y.	9.00	6.60	12.00
24. Install. equip. furnished by the government	840,000 lb.	.03	.017	.05
25. Struct. steel	215,000 lb.	.08	.07	.05
26. Misc. metal work	68,000 lb.	.16	.16	.10
27. Cor. iron pipe	21,000 lb.	.20	.18	.29
28. Wrought iron pipe	52,000 lb.	.16	.22	.18

(Continued on second following page)

Sewers, etc. (Continued)

N. Y., Irvington—Sewage treatment plant, foot of South Main St. $250,000. E. J. Martin, Jr., Tarrytown, engr.

N. Y., Middletown—Repairing 4 mi. trunk sewers. $100,000. J. F. Gates, comr. P. Wks.

N. Y., Mohawk—Storm sewers for flood control, Columbia St. Over $25,000. A. M. Kennedy, village engr.

N. Y., Orchard Park—Rejected bids Dec. 14, sewerage sys. and sewage treatment plant. $268,223. New bids in January. PWA. Industrial Planning Corp., 271 Delaware Ave., Buffalo, engrs. CD 11/29—ENR 12/1.

N. Y., Salamanca—C. C. Winshop, city clk., acquired site West Salamanca, for sewage disposal plant. $300,000. **Maturity in Spring.** D. H. Andrews, city engr. CD 9/26.

Pa., Allentown—Sanitary sewers, 17 Ward, vicinity 23 and Washington Sts. $43,000 plus. **Maturity soon.** E. Meckley, city engr.

Tenn., Waverly—Rejected bids 12/22, sewerage sys., pipe, manholes, trickling filter, etc. PWA. Freeland, Roberts & Co., Independent Bldg., Nashville, engrs. CD 12/7—ENR 12/15.

Wis., Fox Lake—Rejected bids Dec. 15, sewers and sewage disposal plant. $50,000. PWA. Druar & Milinowski, Globe Bldg., St. Paul, Minn., engrs. CD 12/6—ENR 12/8.

Ont., Arnprior—H. Moles, municipality clk., sewers. $25,000.

Ont., Sudbury — Replacing section storm sewers in downtown area, Monck and Elm Sts. $30,000. W. B. McMullen, City Hall, engr.

Que., Three Rivers—2 sewage pump stas. and equip. $45,000. Z. Lambert, City Hall, engr.

BIDS ASKED

Bids Asked January 16

N. Y., Long Island City—President Queens Boro, Queens Subway Bldg., 21-10 49 Ave., sewer, appurtenances, southerly side Grand Central Parkway exten. and in 83 St.; sanitary sewer, appurtenances, 116 Ave. and 138 St.

Pa., Lebanon—Mayor and Council, at office G. H. Biely, city clk., sanitary sewers, appurtenances. O. W. Shay, dir. Parks & Pub. Property; adv. ENR 1/12. PWA. CD 9/21.

Bids Asked January 17

N. J., Trenton—Hamilton Twp. Com., 2090 Greenwood Ave., 34,268 ft. sewer lines, appurtenances, tunnel, trunk and sub-trunk sewers. PWA. S. J. Pettit, 2090 Greenwood Ave., engr.

N. Y., Syracuse—Dpt. Contr. & Purchase, A. Smingler, comr. in charge, City Hall, sanitary sewer Cherry St. Over $25,000.

Wis., Nekoosa — Contr. B, main sanitary sewer, watermains, Contr. C, sewage treatment plant, pumphouse, sewage and sludge pumps, settling tank, etc. PWA. R. Cramer & Sons Co., 647 West Virginia St., Milwaukee, engrs.

Bids Asked January 19

★**Conn., New Haven**—P. Wks. Office, Hall of Records, Meadow St., interceptor sewer. Total est. $1,304,500. PWA gr. Geo. B. Gascoigne & Assoc., Inc., 233 Bway., New York, engrs.

Mass., Lexington — Office Bd. Selectmen, Town Office Bldg., Contr. 2, North Lexington sewerage sys. $55,000. PWA. Metcalf & Eddy, 1300 Statler Bldg., Boston, engrs.; adv. ENR 1/12.

Mass., Saugus—Sewer Com., C. E. Flynn, chn., Town Hall, Contr. 2, force main, sewer, main sewage pumping sta. structure, appurtenant construction; Contr. 3, pump. equip., appurtenant piping, all electrical work. PWA. Way, Spofford & Thorndike, 11 Beacon St., Boston, engrs.

Mich., Detroit—H. E. Beyster, comr. P. Wks., City Hall, automatic standby house service and auxiliary equip., structural changes in primary switch house and main station, Connors Creek storm water pump. sta., at Jefferson and Clairpointe Aves. $25,000. G. R. Thompson, city engr.

Bids Asked January 20

Minn., Tracy—Sewage plant addn. $27,000. PWA. P. C. Bettenburg, 1437 Marshall Ave., St. Paul, engr.

Bids Asked January 23

N. Y., Alfred—Village, sewage disposal plant alterations, addn. to WW sys. $56,175. PWA. Wm. S. Lozier, Inc., 10 Gibbs St., Rochester, engrs. CD 10/17—ENR 8/25.

O., Cleveland—C. B. Patterson, city purch. agt., Contr. 3, intercepting sewer from Cuyahoga River to Southerly Sewage Plant. $200,000. Extended date. R. Hoffmann, City Hall, engr. CD 12/29.

Bids Asked January 24

Calif., Agnews—W. K. Daniels, acting state archt., P. Wks. Bldg., Sacramento, sewer and telephone extens. at Agnews State Hospital, for State.

Mich., Pontiac—H. A. Maurer, city clk., sewage plant addn. and imprv., concrete digestion tank, aeration units, etc. Total project $360,000. PWA. L. M. Wrenn, city engr. H. P. Jones & Co., 2012 2nd Natl. Bank, Toledo, O., consult. engrs. CD 12/15—ENR 12/22.

Bids Asked January 26

D. C., Wash.—Dist. Comrs., District Bldg., sewage treatment facilities, Penal Institution, Lorton, Va. $187,000.

Bids Asked on or about February 7

N. Y., Ossining — Intercepting sewers, Contr. 4. $35,000. J. C. Harding, 11 Park Pl., New York, and Abel Bldg., Mount Kisco, consult. engr.

CONTRACTS AWARDED

Calif., Napa—City, sewers, Pine St. and Seminary Ave., to M. J. Lynch, Berneveld and Oakdale Aves., San Francisco, **$16,165.** CD 12/16—ENR 12/22.

Calif., Placerville — City Clerk, secondary sewers, sludge beds, at sewage treatment plant, to Pacific Coast Constr. Co., 350 California St., San Francisco, **$7,274.** Bids 12/29. CD 12/23.

Colo., Montrose—City Clerk, sewage treatment plant, to H. Shore, Grand Junction, **$30,938.** Bids 12/17. CD 12/6—ENR 12/8.

Conn., Darien—Water & Sewerage Comn., Town Hall, Contr. 2, treatment plant; Contr. 3, pump. stas. 2, and force main, to Sloane Constr. Co., Inc., 415 Lexington Ave., New York, **$92,896** and **$38,793** respectively*** Contr. 4, Glenbrook sewers, to DiMarco & Ciccone, 151 E. Post Rd., White Plains, **$52,938***** Contr. 5, Noroton sewers, to P. Bacco, 1 Atlantic St., Stamford, **$79,212***** Contr. 6, sewers and force main, Noroton, to Joseph Sigretto & Son, Rutherford, N. J., **$60,682***** sewers, Darien Center and Stony Brook, to Thomas F. Foley Co., Inc., 77 Day St., South Norwalk, **$123,310.** Grand total $447,831. Award subject to **PWA** approval. Bids 12/29. CD 12/15—ENR 12/22.

Fla., Daytona Beach — Contr. A, general construction incinerator plant, to H. R. Goyke & J. F. Reynolds, Duval Bldg., Jacksonville, **$17,120. PWA.** Bids 12/9, awarded 12/28.

Ga., Statesboro—Sewerage sys. imprv., vitr. clay pipe, pump, etc., to J. G. Attaway Constr. Co., Statesboro, **$33,648.** Est. $34,068. **PWA.** Bids 12/21. CD 12/5—ENR 12/8.

Idaho, Moscow—Sewage treatment plant, to McAtee & Heath, E. 930 16 St., Spokane, Wash., **$70,731.** Est. $68,322. Bids 12/24. CD 12/7—ENR 12/15.

Ill., Forrest—WW and sewerage sys., to Gjellefald Constr. Co., Forest City. Est. **$37,000. PWA.** CD 8/5—ENR 8/11.

Ill., Havana—Sewage plant, to Orfei Constr. Co., 5 Bway., Melrose Park, **$46,555.** Bids 12/16. CD 12/2—ENR 12/8.

Ill., Oblong—M. Cortelyou, mayor, furnishing, installing all equipment for sewage disposal plant, etc., to Case Eng. Co., 6524 Hancock Ave., St. Louis, Mo. Bids 12/20. CD 12/16.

Ill., Rock Island—One unit sewerage sys., east half of Mississippi River portion of intercepting sewer, to Drainage Contractors, Inc., 14375 Schaefer St., Detroit, Mich., **$337,468.** Bids 12/30. CD 12/14—ENR 12/22.

Ind., Gary—Bd. P. Wks., R. E. Rowley, pres., City Hall, Contr. 1, Div. C, rehabilitation Miller sewage treatment plant, to J. S. Barrett, Park Ridge, Ill., **$68,970. PWA.** Bids 12/30, awarded 12/30. CD 12/9—ENR 12/15.

Ind., Hammond—Bd. Sanitary Comrs., J. E. Haney, pres., City Hall, Div. 2, Robertsdale Pump. Sta., to H. B. Olney, Inc., East Chicago, **$123,349.** Bids 12/27, awarded 12/30. CD 12/9—ENR 12/15.

Md., Chevy Chase — Sewers, to Marocco Constr. Co., 231 S. Exeter St., Baltimore, **$29,946. PWA.**

Md., Glen Burnie—Anne Arundel Co. Sanitary Comn., general contract sanitary sewers, Contr. 11-S, to Frank Angelozzi & Sons, 123 S. High St., Baltimore, **$96,572.**

Md., Rockville—General contract, sewers, treatment plant, to Ligon & Ligon, 3310 Ridgewood Ave., Baltimore, **$55,362. PWA.**

Md., Salisbury — Sanitary sewer exten., Contr. 1, to George & Lynch, Salisbury, **$29,020. PWA.**

Mich., Menominee—Digestion tanks, sludge beds, to John Salen & Son, Menominee, **$56,754. PWA.** Bids 12/22. CD 12/7—ENR 12/15.

Mich., Richmond—Concrete tanks, building and connections for sewage treatment plant, to Furton Bros., St. Clair, **$32,000.** Bids 12/19. CD 12/8.

Minn., Jackson — Sewage disposal plant, **WPA. $40,000.** A. E. Wallace, clk. CD 3/9—ENR 3/17.

Minn., Owatonna—Sewage treatment plant, to E. A. Carlston, Mankato, **$103,374.** Est. $145,000. **PWA.** Bids 12/22. CD 12/12—ENR 12/15.

Minn., South St. Paul—Contrs. 1 and 2, sewage disposal plant, intercepting sewers, etc., to Orfei, Lametti & Lametti, 1744 Sheridan St., St. Paul, **$14,300. PWA.** Bids 12/22. CD 11/30—ENR 12/8.

Neb., Chadron—Sewers, road imprv., to Inland Constr. Co., 3867 Leavenworth St., Omaha, **$44,958.** Est. $50,000. **PWA.** CD 11/14—ENR 11/10.

Neb., Mullen—Sanitary sewer, to W. Kelley & Co., Grand Island, **$23,583. PWA.** Bids 12/20. CD 12/14.

N. H., Claremont — Bd. Selectmen, Opera House, Contr. 1, trunk sewer, outfall line, to P. Ricci, Newport, **$13,472. PWA.** Bids 11/22. CD 11/1—ENR 11/3.

N. Y., Binghamton—Drainage installation in athletic fields of city schools. **WPA.** Over **$25,000.**

N. Y., Buffalo—Dpt. P. Wks., City Hall, addnl. sewers, storm sewers, etc., **WPA. $100,000** plus.

N. Y., Cortland—Contr. 2, sewerage system, sewage treat. plnt., to Mondo Constr. Co., 417 S. Townsend St., Syracuse. **$11,700.** Total est. $314,700. **PWA.** Bids 1/4. CD 12/20—ENR 12/22.

N. Y., Elmira—Council, additional sewers, cutting pavement, shoring, etc. **WPA. $150,400.**

N. Y., Greece — Office G. A. Howe, town supvr., Town Hall, repairing sewers constructed by defaulted Contr. 5, to C. G. Schoen, 36 N. Main St., Pittsford. **$4,021. PWA.** Bids 12/22. CD 12/7—ENR 12/15.

N. Y., Greenburgh (P. O. Tarrytown)—Town of Greenburgh, constructing sewers, Hartsdale Lawns development. **WPA. $275,000.**

N. Y., Jamaica—Dpt. P. Wks., Municipal Bldg., New York, Contr. 3, preparation plant site for Jamaica Sewage treatment works, to Stock Constr. Co., Grand Central Terminal, New York, **$172,100.** Bids 12/20. CD 12/1—ENR 12/8.

N. Y., Kingston — Sanitary and storm sewers, various streets, **WPA. $25,000** plus.

N. Y., Lackawanna—Addnl. sewers, intercepting storm sewers, **WPA. $50,000** plus.

N. Y., Lowville—J. W. Singer, village clk., general contract sewage treatment plant, to W. H. Rich & Sons, Lowville. **$32,539. PWA.** Bids 12/8. CD 11/28—ENR 12/1.

N. Y., New Rochelle—Office A. J. Fearing, dir. P. Wks., City Hall, Contr. 2, heating for incinerator plant, to John McGovern & Co., Inc., 265 Hugenot St., **$4,000. PWA.** Former award cancelled. CD 11/30—ENR 12/8, under CA.

N. Y., North Tarrytown—B. Reilly, village clk., at office Bd. Trustees, sanitary intercepting sewers, to Villard Contg. Co., Hastings. **$5,880. PWA.** Bids 12/9. CD 11/29—ENR 12/1.

N. Y., North Tonawanda — Laying storm sewers, Cramer St., Linden, Brundage, Wendell and Williams Aves., **WPA. $30,520.**

N. Y., Ossining—Outfall sewers, to Spearin, Preston & Burrows, Inc., 50 Church St., New York., **$41,940. PWA.** Bids 11/22. CD 11/10—ENR 11/17.

N. Y., Peekskill—General contract refuse incinerator, garage, to Nicholas Eng. & Research Corp., 60 Wall Tower, New York **$82,650***** plumbing, to H. Jacobson, 413 Washington St., **$1,683***** heating, to C. Stein, Bleloch Ave., **$1,734***** electrical work, to E. P. Burns, Peekskill, **$922.** Grand total $86,989. **PWA.** Bids 12/17. CD 11/30—ENR 12/8.

N. Y., Shortsville—Village, sanitary sewers, to Street Bros. Constr. Co., Inc., 921 Hiawatha Blvd. E., Syracuse, **$88,317. PWA.** Bids 12/5. CD 11/23—ENR 12/1.

N. Y., South Nyack—R. Gunree, mayor, general contract sewage disposal plant, to Centone Bros. Inc., 21 Cliff St., Verona. **$48,782. PWA.** Bids 12/6. CD 11/28—ENR 12/1.

N. Y., Syracuse—Dpt. P. Wks., City Hall, storm and sanitary sewers, backfill, excav., main and lateral sewers, **WPA. $200,000** plus.

N. Y., Tarrytown—Mayor and Bd. Village Trustees, Village Hall, Contr. 1, sanitary sewers, to Linn Ave. Constr. Corp., 1 Lawton St., Yonkers, **$65,932. PWA.** Bids 12/5. CD 11/21—ENR 11/24.

N. Y., Utica — Laying rein.-con. storm sewers, Jason and Erie Sts., **WPA. $44,497.** CD 12/29.

N. Y., White Plains — Westchester County Sanitary Comn., County Office Bldg., Sect. N, Part 1, North Yonkers, trunk sewers, to Intercounty Constr. Co., Sylvan Pl., Rye, **$19,673. PWA.** Bids 11/14. CD 11/3—ENR 11/10.

N. Y., Yonkers—A. Miller, secy. Bd. Contr. & Supply, Contr. 9, Job 94, house and storm water sewer, Seminary Ave., to John Mucci, Inc., 68 Algonquin Rd., **$18,176. PWA.** Bids 11/3. CD 10/27—ENR 8/4.

N. Y., Yonkers and Greenburgh—City of Yonkers and Town of Greenburgh, sanitary sewers, manholes, Fort Hill Rd., **WPA. $25,000** plus.

N. C., Burlington—Sect. A, 2 unit 60 ton incinerator, to Pittsburgh-Des Moines Constr. Co., Neville Island, Pittsburgh, Pa., **$35,340*****Sect. B, plumbing, to Kirkman Plumbing & Heating Co., Burlington, **$425***** Sect. C, refuse collecting trucks, to Alamance Motor Co., Burlington, **$6,067.** Grand total $41,832. Est. $40,750. Bids 12/29. CD 11/29—ENR 12/1.

(Contract Unit Prices continued from p. 13)

29. Black steel pipe	86,000 lb.	.15	.11	.16
30. Galv. steel pipe	32,000 lb.	.20	.17	.22
31. Cast iron pipe	5,200 lb.	.15	.11	.12
32. Misc. iron castings	9,800 lb.	.15	.13	.15
33. Iron castings (special analysis)	82,000 lb.	.16	.16	.14
34. Misc. brass and bronze	6,400 lb.	.80	.45	.75
35. Gantry crane rail	46,000 lb.	.08	.06	.05
36. Plumbing system	L.S.	4,500.00	1,300.00	1,200.00
37. Ornamental metal work	L.S.	5,000.00	4,000.00	4,000.00
38. Brickwork	L.S.	300.00	250.00	120.00
39. Glass blocks	L.S.	600.00	500.00	500.00
40. Roofing	L.S.	700.00	400.00	750.00
41. Timber work	30 M.b.m.	180.00	165.00	125.00
42. Copper stops	15,000 lb.	.60	.55	.50
43. Steel water stops	85,000 lb.	.09	.11	.09
44. Conduits for electric wiring	L.S.	8,500.00	13,500.00	8,500.00
45. Power and lighting system	L.S.	4,200.00	16,500.00	11,500.00

WATER LINE, UTAH

OWNER: City of Punguitch, Utah; John H. Clark, engineer.

PROJECT: Construction of steel pipe line to replace wooden supply line for the city's water system. Project consists of 39,215 ft. of 10-in. steel welded pipe for supply line and 3,000 ft. of 8-in. steel welded pipe for feeder line. Separate contracts were made on materials and labor. Transportation is by railroad to within 55 mi. of the site and by state highway the rest of the distance.

BIDS: Bids were opened Nov. 5, 1938. For materials, there were five bids ranging from the contract low of $52,015 to $60,863. For labor, there were three bids ranging from the contract low of $10,579 to $16,869. Labor rates are as follows: Skilled, $1.00 per hr.; semi-skilled, $.625 per hr.; common, $.50 per hr. Contract is to be finished by June 30, 1939.

Materials

LOW BIDDERS:

1. R. Hardesty Mfg. Co., Salt Lake City (contract) $52,015
2. Southern Pipe & Casing, Azura, Calif. 54,488
3. Provo Foundry & Machine Co., Provo, Utah .. 56,236

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Steel Pipe — 10 ga. dipped, wrapped; preformed for field welded joint laid in trench, tested and ready for back-filling, joints for expansion every 500 ft	17,000 ft.	$1.01	$1.06	$1.08½
2. 10-in. valve, flanged	1 ea.	62.08	66.00	98.00
3. 1-in. air valve, vacuum. relief, 600-lb. test	5 ea.	22.32	23.10	18.00
4. 10x10x4-in. tee, 4-in. end flanged	2 ea.	6.18	4.00	14.00
5. 4-in. valve, flanged, 600-lb. test	2 ea.	30.87	38.50	26.00
6. 10-in. steel pipe, 7-ga. same spec. as above	11,215 ft.	30.87	1.28	1.32
7. 10x10x4-in. tee, 4-in. end flanged	4 ea.	28.87	4.00	14.00
8. 4-in. valve, 600-lb. test	4 ea.	.....	38.50	25.00
9. 1-in. air & vacuum relief valve, 600-lb. test	10 ea.	.....	23.10	19.00
10. 10-in. steel pipe, 3-ga. same spec. as above	11,000 ft.	30.87	1.70	1.81
11. 10x10x4-in. tee, 4-in. end flanged	4 ea.	28.87	4.00	14.00
12. 4-in. valve, 600-lb. test	4 ea.	.....	38.50	26.00
13. 1-in. air & vacuum relief valve, 600-lb. test	5 ea.	.....	23.10	18.00
14. 8-in. steel pipe	3,000 ft.	.75	.82	.74

Labor

LOW BIDDERS:

1. B. D. Palfreman, Provo (contract) $10,579
2. Enoch Smith, Salt Lake City 15,578
3. Niels Sugal, Pleasant Grove, Utah 16,869

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Trench & backfill, common, trench 2 ft. deep, for 10-in. steel pipe, dipped and wrapped	39,000 ft.	$.20	$.26	$.30
2. Trench & backfill, solid rock excav. for 10-in. steel pipe, dipped & wrapped	400 c.y.	1.75	8.00	7.00
3. Const. of temp. bridge and approaches	100 ft.	.60	1.50	3.00
4. Protective encl., 1,675 ft. B.M.Y.B. planking in fabricated box	100 in.	1.50	1.50	1.17
5. "Rockwool" insulation, J-M or equal	41 c.f.	.40	1.00	1.00
5a. Creosote, applied	7 gal.	2.00	1.00	6.00
6. Excav. for bridges & washes, 20 ft. clear span — max	20 c.y.	1.50	2.00	1.50
7. Rubble masonry, conc	12 c.y.	12.00	16.00	12.00
8. Protect. encl. 16.75 B.M.Y.B. plank per ft. of length	80 ft.	1.50	2.00	1.17
9. "Rockwool" insulation, J-M or equal	32 c.f.	.40	1.00	1.00
10. Creosote, applied	6 gal.	2.00	1.00	6.00
11. Excav., common, for reinf. conc. tank	6 c.y.	1.50	2.00	1.50
12. Excav. rock, for same	3 c.y.	2.00	10.00	6.00
13. Reinf. conc. for same	9.1 c.y.	25.00	25.00	34.00
14. 30-in. C.I. manhole cov. w. ring	1 only	35.00	30.00	15.00
15. Iron ladder	3 ea.	10.00	10.00	20.00
16. 10-in. double hub fittings	2 ea.	2.00	5.00	12.00
17. 8-in. double hub fittings	1 only	2.00	5.00	10.00
18. Excav. and backfill 2 ft. deep for 8-in. pipe	3,000 ft.	.30	.27	.25
19. Install 8-in. slip joint steel, dipped & wrapped	3,000 ft.	.10	.10	.11
20. Install 8-in. C.I. valve	1 only	6.00	5.00	8.00

MUNICIPAL WORKS, ALASKA

OWNER: City of Anchorage, Alaska; D. Setchfield, engineer.

PROJECT: Construction of paving, sewers and water mains on 4th Ave., from C to L Sts., a total length of 2,940 ft. Stipulated contract time is 150 days; transportation is by water and rail. Freight rates are high.

BIDS: Five bids were received Oct. 19, 1938, ranging from the contract low of $95,531 to $124,161. Labor rates are as follows: skilled, $1.50 per hr.; semi-skilled, $1.25 per hr.; common, $.90 per hr.

LOW BIDDERS:

1. R. H. Stock, Seattle (contract) $95,531
2. C. R. Wright & Co., Seattle 107,215
3. McPherson & Pongratz, Anchorage 107,530

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Remove old curb	1,800 l.f.	$0.1115	$0.20	$0.25
2. Excav., paving	8,908 c.y.	1.00	.80	.82
3. Gravel base fill	6,380 c.y.	1.00	.90	1.20
4. Integral curb, gutter	2,974 l.f.	1.25	1.30	1.50
5. 6x12-in. gutter	2,870 l.f.	.75	.65	.85
6. Alt. 1, 6-in. conc. pav	7,186 s.y.	3.50	4.90	3.60
7. 7-in. conc. pav	7,186 s.y.	4.00	5.40	4.30
8. Alt. 1, 6-in. conc. int	133 s.y.	4.50	4.90	3.60
9. 7-in. conc. pav. int	133 s.y.	5.00	5.40	4.00
10. 4-in. oil mat paving	585 s.y.	2.20	2.75	2.10
11. 2-in. oil mat paving	9,669 s.y.	1.15	1.40	1.12
12. 4x8-in. fir header	892 l.f.	3.00	.80	.40
13. ¾x24-in. dowel bars	384 pcs.	.50	.50	.40
14. ½-in. sq. reinf	2,000 lb.	.10	.13	.20
15. 1¼-in. conduit pipe	6,500 l.f.	.50	.40	.40
16. Monument cases	9 ea.	.....	25.00	12.00
17. 6-in. wood stave pipe	6,525 l.f.	1.90	1.90	3.00
18. 4-in. wood stave pipe	180 l.f.	1.60	1.60	2.90
19. 4-in. wood stave nipples	6 ea.	6.00	4.00	2.10
20. Fire hydrants	6 ea.	150.00	175.00	109.00
21. 4-in. valves for watermain	6 ea.	50.00	47.00	25.00
22. 6-in. valves for watermain	4 ea.	60.00	82.00	35.00
23. 6-in. C.I. crosses	7 ea.	20.00	26.00	25.00
24. 6x6x4-in. C.I. tees	6 ea.	17.00	17.00	20.00
25. 6x6x6-in. C.I. tees	1 ea.	17.00	20.00	30.00
26. 12-in. sewer pipe	1,410 l.f.	3.50	4.50	5.50
27. 15-in. sewer pipe	763 l.f.	4.50	5.50	6.00
28. 8-in. sewer pipe	650 l.f.	2.70	3.75	4.00
29. Conc. manholes	10 ea.	150.00	200.00	100.00

One Dollar Reward

For information leading to publication of "Unit Price" data on building jobs

Frequently readers have asked ENR *to publish unit prices as bid on the construction of buildings. This is difficult because of the relatively few building contracts let on this basis, but with the cooperation of readers who have local knowledge of such contracts, it should be possible to include more unit prices on building in these pages in the future.*

If you know of a building job that is being let on a unit price basis, then, tip us off. Our regular correspondent in your area will obtain the tabulations etc., and you will receive one dollar for each tip that is productive of copy for these columns.

Sewers, etc. (Continued)

N. C., Lenoir — Sewage treatment plant, to North-Eastern Constr. Co., Winston-Salem, **$187,491. PWA.** Bids 1/3. CD 12/19—ENR 12/22.

N. C., Newton—Contr. 1, sewer distr. sys., to Reed & Abee, Fairview Rd., Asheville, **$32,307***Contr. 2, water distr. sys., to Blythe Bros., 424 S. Brevard St., Charlotte, **$102,890** ***Contr. 3, sewerage treatment plant, to G. H. Guion Co., Kinney Bldg., Charlotte, **$59,-906.** Grand total $195,103. Est. $202,000. **PWA.** Bids 12/14, awarded 12/21. CD 12/6—ENR 12/8, under "Waterworks."

O., Cleveland—Sewer relocation work for Cuyahoga River straightening, to Kassouff Co., 14101 Milverton Rd., **$27,947.** R. Hoffmann, City Hall, engr.

O., Dayton—Garbage incinerator, building equip., to Nichols Eng. & Research Corp., 60 Wall Tower, New York, **$151,000.** Est. $162,-000. Bids 12/27. CD 12/13—ENR 12/15.

O., Elyria—Lorain Co., sewerage exten. in connection with high level bridge, to Ohio Eng. Co., 105 Sixth St., Lorain, **$13,961.**

O., Lancaster—Interceptor sewers, to H. E. Miller, 1497 N. Star Ave., Columbus, **$41,277. PWA.** Bids 12/14. CD 12/9.

O., Trotwood—Sewerage disposal plant, to Wetzel & Hall, 325 Laurence St., Dayton, **$32,-908.** Est. $54,545. CD 10/20.

O., Piqua—Sewage disposal plant, Contr. 1, to L. C. Love, Anderson, Ind., **$11,500.** Total est. $200,000. **PWA.** Bids 12/23. CD 12/1—ENR 12/8.

O., Willard — Contr. 1, sewers, to N. D. Mancini, Detroit, Mich., c/o C. C. Hessler, clk., **$59,562**; Contr. 2, sewage disposal plant, to Bever & Morris, Blackstone Bldg., Cleveland, **$56,397.** Est. $130,909. **PWA.** Bids 12/9. CD 12/5.

Ore., Silverton—Sewage treatment plant, to Kuckenberg Constr. Co., 1104 N.E. Holman St., Portland, **$34,248***sludge pump, to Palmer Supply Co., 222 Westlake St. N., Seattle, Wash., **$455***settling tank mchy., to Link Belt Co., 1637 N.W. 14 St., Portland, **$1,705** ***rotor distributor and syphon, to Dorr Co., Inc., 811 W 7 St., Los Angeles, Calif. **$1,115.** Grand total $37,523. Est. $47,000. **PWA.** Bids 12/20. CD 12/8.

Pa., Clarion—Boro, W. B. Edwards, secy., Contr. 2, sewage disposal plant, to Means Bros. Constr. Co., Punxsutawney, **$38,837.** Bids 1/3. CD 12/22—ENR 12/29.

Pa., Girard—Boro, G. H. Coney, secy., sewage treatment plant, to Henry Shenk & Co., 1115 Sassafras St., Erie, **$29,695.** Est. $34,720. **PWA.** Bids 12/12. CD 12/6—ENR 12/8.

★ **Pa., Pittsburgh**—F. M. Roessing, city dir., Sect. 1, 4 Mile Run Sewer, to D. Dinardo, 333 Boquet St., **$212,548**, est. $212,548*** relief sewers in Columbus Ave. Sect. 1 Drainage Basin, Contr. 2, to R. D. Thomas, 3616 5 Ave., **$266,221**, est. $300,000***relief sewers, Sect. 1 of Negley Run Drainage Basin, to Frank Mannella & Sons, 1507 N. Lang Ave., **$291,717**, est. $291,717. Grand total $770,486. Bids 12/23. CD 12/20—ENR 8/11.

R. I., North Providence—Town, F. J. Kiernan, chn. Sewer Comn., Town Hall, Contr. 3, sanitary sewerage sys., Smith St., Fruit Hill Ave., etc., to L. Capaldi & Sons, Inc., 270 Mt. Pleasant Ave., Providence, **$144,198.** Bids 12/27. CD 12/20—ENR 12/22.

S. C., Eau Claire—Sewage treatment plant and pump sta., to M. L. Gaines, 2307 Divine St., Columbia, **$44,965. PWA.** Bids 12/30. CD 12/23.

S. C., Greenville—Item 1, gas holder and tank for sewage disposal plant, to R. D. Cole Mfg. Co., Newnan, Ga., **$19,800**; Item 2, pile fdn. for tanks, to C. Y. Thompson Co., Greenville, **$42,890.** Est. $57,000. **PWA.** Bids 12/30. CD 12/6—ENR 12/8.

Tex., Nixon—Sanitary sewer lines. "Purchase and Hire" plan. **$35,000.** CD 10/6—ENR 10/13.

Tex., San Antonio—C. K. Quin, mayor, sanitary sewer lines. "Purchase and Hire" plan. **WPA. $40,000.** I. Ewig, city engr.

Va., Appamattox—Contr. 1, sewerage disposal plant, to C. L. Tinsley, Roanoke, **$53,-969.** Est. $55,472. **PWA.** Bids 11/21, awarded 12/29. CD 11/10.

Va., Richmond — Henrico Co., Contr. 1, sewer line, to A. J. Pinston, 10½ Stop, Norfolk, **$36,719.** Est. $29,209. **PWA.** Bids 12/20, awarded 12/20. CD 12/9—ENR 12/15.

Wis., Park Falls—Sewage treatment plant, to Zachek Constr. Co., Denmark, **$65,390. PWA.** Bids 12/22. CD 12/13.

Wis., Reedsburg—Sewers and pump. sta., to L. C. Welch, Baraboo, **$84,393**; sewage treatment plant, to Friede Bros. Constr. Co., Reedsburg, **$104,645. PWA.** Bids 12/12. CD 11/29.

Wis., Wautoma—Village, sewage treatment plant, to B. B. Ganther Co., 78 State St., Oshkosh, **$30,525. PWA.** Bids 12/22. CD 12/15.

Wis., Wisconsin Rapids—Sewer, to D. Christensen Constr. Co., Cedar Rapids, Ia., **$56,282** ***Inter-chambers and Dewey St. Lift Sta., to F. F. Mengel Co., Wisconsin Rapids, **$24,153** and **$25,898** respectively***force main, to L. G. Arnold, Inc., Eau Claire, **$18,575.** Grand total $124,908. **PWA.** Bids 12/27. CD 12/22.

BRIDGES, GRADE CROSSINGS

PROPOSED WORK

Calif., Quincy — Plumas Co., completing plans, Arlington Bridge. A. J. Watson, Court House, co. surv.

Conn., Bridgeport—J. McLevy, mayor, new deck East Washington Bridge, $12,000; rebuilding State St. Extension Bridge, $15,000; 3 small bridges, Laurel Pl., Arcadia and Aldine Sts., $27,000.

Conn., Stonington—New York, New Haven & Hartford R.R. Co., E. E. Oviatt, ch. engr., Water St., New Haven, rebuilding steel railroad bridge, Wequetequock Cove. $175,000.

Illinois—State Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldg., Springfield, rebuilding viaduct to have two 24 ft. roadways separated by central approach curb and through girder, etc., under Illinois Central R.R., in Kankakee. $35,000-$55,000 plus. Cost to be borne by State and Railroad.

Ky., Louisville—City, c/o City Engineer, City Hall, and Louisville & Nashville R.R., G. R. Smiley, ch. engr., Louisville, overpass over railroad tracks on Adair St., Highland Park. $172,000. PWA.

Massachusetts — Commonwealth of Massachusetts, Dpt. P. Wks., W. F. Callahan, comr., 100 Nashua St., Boston, rebuilding 300 ft. bridge, concrete piers, abutments, steel superstructure over Deerfield River, Charlemont. $80,000. G. H. Delano, c/o owner, ch. engr.

Massachusetts — Commonwealth Massachusetts, Dpt. P. Wks., W. F. Callahan, co. comr., 100 Nashua St., Boston, plans single span, steel I-beam bridge, concrete abutment, deck, approaches, Wendell. $60,000.

Mass., Gardner—Commonwealth of Massachusetts, Dpt. P. Wks., W. F. Callahan, comr., 100 Nashua St., Boston, will not construct grade crossing over B. and M. R.R., Mechanic St. $250,000. Project abandoned.

Missouri—State Hy. Comn., Jefferson City, plans 200 ft. bridge over Chicago, Burlington & Quincy R.R., Route 4, Proj. FAGH 50B2, at New Hampton, Albany-Bethany Rd., Harrison Co. Over $25,000. C. W. Brown, Jefferson City, engr.

Mo., Piney—Henry Co. (Clinton) and St. Clair Counties (Osceola) at Clinton, rejected bids Dec. 23, 550 ft. span bridge over Osage River, near here. $25,000. PWA. J. W. Shikles, New York Life Bldg., Kansas City, Mo., engr. CD 12/14.

N. C., Winston-Salem—State Hy. & P. Wks. Comn., Raleigh, bids soon underpass (Southern R.R.) on Patterson Ave., Forsyth Co. Over $40,000. W. V. Baise, Raleigh, engr.

Oklahoma—State Hy. Dpt., Oklahoma City, overpass over Rock Island lines at Yukon, Canadian Co., $150,000; 6 span, 185 ft. I-beam, concrete piers, at Guthrie, Logan Co.; overpass over Frisco Ry. at Ada, $65,000. V. T. Moon, Capitol, Oklahoma City, engr.

Okla., Stillwater—Payne Co., rebuilding 20 span, 400 ft. wooden trestle, recently destroyed by fire. $35,000. G. Wittenberg, Stillwater, engr.

Tex., Dallas—State Hy. Comn., R. L. Babbit, chn., Austin, Texas Electric Ry. underpass and approaches, Hy. 246, FAGH 927 B, Dallas Co. $109,000. J. G. Rollins, Dallas, div. engr.

Tex., Plemons—State Hy. Comn., R. L. Babbitt, chn., Austin, overpass across tracks C.R.I. & G. Rwy., S.H. 117, Hutchison Co. H. E. Eldridge, Austin, bridge engr.

N. B., Edmonton—Province of New Brunswick, Fredericton, replacing present bridge with steel, concrete bridge over River Wadawaska linking Church and Victoria Sts. $30,000. Dpt. P. Wks., Fredericton, engrs.

Ont., Port Arthur—S. E. Flook, engr., City Hall, 1,000 ft. rein.-con., steel bridge, May St. $150,000.

Ont., Rossport—Dominion Government, Ottawa, subway under Canadian Pacific R.R. tracks. $100,000. Dpt. Transport, Ottawa, engrs.

Ont., Selim—Secretary Dpt. Transport, Ottawa, bids early 1939, subway under Canadian Pacific Ry. tracks. $75,000. Private plans.

Que., Montreal — Canadian National R.R., C. B. Brown, ch. engr., 360 McGill St., lift bridge over Lachine Canal. $200,000.

Que., Montreel — Canadian National R.R., C. B. Brown, ch. engr., 360 McGill St., converting present tracks on Victoria Bridge into 2 vehicular roadways. $250,000.

Que., Quebec—Secretary National Harbours Bd., Ottawa, Ont., bids soon bascule span bridge, Louise Basin. About $100,000. Col. A. E. Dubuc, Ottawa, Ont., engr.

Que., St. Hyacinthe—M. A. David, city clk., subway at Laframoise St. $25,000. J. Bouchard, City Hall, engr.

Que., St. Hyacinthe—M. A. David, city clk., subway, Bourdages St. $25,000. J. Bonchard, City Hall, engr.

Que., St. Hyacinthe—Provincial Government, c/o J. S. Bourque, minister P. Wks., Quebec City, rein.-con. bridge, Hy. 20. $30,000. Dpt. P. Wks., Quebec City, engrs.

BIDS ASKED

Bids Asked January 17

Iowa—State Hy. Comn., Ames, 34 concrete box culverts, extens., 150x24 ft. continuous I-beam bridge, P. 929, Decatur Co.; 23x16 ft. wood bridge S.H. 74 northwest of Maysville, FN 55, Scott Co. F. R. White, ch. engr.

New York—New York City Parkway Auth., Contr. 12, bridge toll structure at Cross Bay bridge, Queens Boro. Madigan-Hyland, 28-04 41 St., Long Island City, consult. engrs.

West Virginia—State Rd. Comn., Charleston, Ivydale Bridge S-1388, one 163 ft. steel through truss, two 65 ft. and one 36 ft. steel I-beam spans, Clay Co.; Nutter Fork Bridge 1531, approaches, one 50 ft. concrete deck girder, concrete substructure, etc., Doddridge Co. M. R. Hamill, secy.

Bids Asked January 19

Ill., Peoria—Peoria Co., 27.7 ft. steel W. F. beam bridge, Sect. 41-C-MFT. G. H. Baker, Centennial Bldg., Springfield, state engr. co. roads and city streets.

N. J., Cape May Courthouse — Office Bd. Freeholders Cape May Co., Courthouse Bldg., reconstructing trestle, roadway deck revisions structural parts at Sea Isle Draw Bridge, Sea Isle Blvd., Sea Isle City and Dennis Twp., Contr. C-2, $10,216; placing steel beams, cement mortar protection, riprap Cedar Swamp Creek Bridge, Tuckahoe Rd., Upper Twp., Contr. A-2, $9,800. PWA. R. A. Sharp, co. engr.; adv. ENR 1/12.

Bids Asked January 20

Georgia—See "Roads."

New York—Dpt. Parks, R. Moses, comr., Arsenal Bldg., Central Park, 5 Ave. and 64 St., New York, grade separations, Hillside Ave., on Cross Island Parkway, Queens Boro, Contr. SC-39-1.

Bids Asked January 26

California—C. H. Purcell, engr. State Hy. Dpt., 808 State Bldg., Los Angeles, grade separation, Santa Fe Ry., Rosemead Blvd., Chapman Sta., Los Angeles Co.; 127 ft. grade separation over San Diego & Arizona Eastern Ry., La Mesa, San Diego Co. Over $50,000.

Bids Asked January 27

O., Lorain—Bd. Comrs., Lorain Co., F. C. Ruth, clk., Contr. 3, 2 bridges over E. Erie Ave. and 21st St., retaining walls, steel sheet piling, excavating, etc. $151,000. F. R. Walker, 2341 Carnegie Ave., Cleveland, archt. W. Watson & Assoc., 4614 Prospect Ave., engrs.

Bids Asked January 31

Ia., Waterloo—State Hy. Comn., Ames, abutments, midstream piers, superstructure approaches for bridge across Cedar River at Park Ave. $230,000. PWA gr. CD 12/8.

CONTRACTS AWARDED

Arkansas—See "Roads."

Calif., Los Banos—R. E. Pierce, dist. engr., State Hy. Comn., Stockton, redecking, widening bridge over Fresno River, to A. A. Tieslau, 2819 Telegraph Ave., Berkeley, $14,134. Bids 12/29. CD 12/19.

Colorado—State Hy. Dpt., Denver, overpass, gravel surfacing approaches, 0.416 mi. hy. Grand Co., and railroad overpass, approaches 0.565 mi. also pedestrian underpass, Main St., Grand Junction, Mesa Co., to C. Knutson, 3527 Bway., Kansas City, Mo., **$62,799** and **$115,429** respectively. Bids 12/19, awarded 12/27. CD 12/9.

★ **Connecticut** — W. J. Cox, comr. Hy. Dpt., Hartford, superstructure Housatonic Bridge, Wilbur Cross Parkway, Milford and Stratford, to American Bridge Co., 71 Bway., New York, **$517,300***substructure for same, to A. I. Savin Constr. Co., 10 Village St., East Hartford, **$410,683***bridge over Menunketesuck River, Clinton, to Biral Constr. Co., 694 Woodward Ave., New Haven, **$15,170.** Grand total $943,153. Bids 12/15. CD 12/20—ENR 12/22.

Connecticut—W. J. Cox, comr. State Hy. Dpt., Hartford, 899 ft. steel beam bridge over Shetucker River, Norwich and Sprague, to A. I. Savin Constr. Co., 10 Village St., East Hartford, **$93,200.** Bids 12/19. CD 12/14, under "Roads."

Fla., Fort Lauderdale—Contr. 1, clearing, grubbing, excavation in connection with causeway, to Bryan & Holloway, Inc., Belle Glade, **$32,750. PWA.** Bids 12/28, awarded 12/30.

Illinois and Iowa—City of Rock Island, Ill., approach piers on proposed Rock Island, Ill.-Davenport, Ia., bridge over Mississippi River, to Central Eng. Co., 2531 Rockingham St., Davenport, **$28,395.** Bids 12/23, awarded 12/29. CD 12/14.

Ind., Indianapolis—Bd. P. Wks., L. Brandt, chn., City Hall, reconstructing bridge, to Ben Hur Constr. Co., Inc., 1900 Montcalm St., **$107,500.** Est. $110,000. Bids 12/2. CD 12/7.

Iowa — State Hy. Comn., Ames, 50x24 ft. I-beam bridge, Carroll Co., to A. M. Cohron, 107 Army Post Rd., Des Moines, **$40,081***** 26 concrete box and 2 concrete arch culverts, Cherokee Co., to Graves Bros. Constr. Co., Melvin, **$37,772***50x24 ft. I-beam bridge, same road, to F. O. Montgomery Co., Sac City, **$9,617***180x24 ft. and 130x24 ft. continuous I-beam bridges, Chickasaw Co., to C. A. Holvik, 415 N. Madison Ave., Mason City, $38,-